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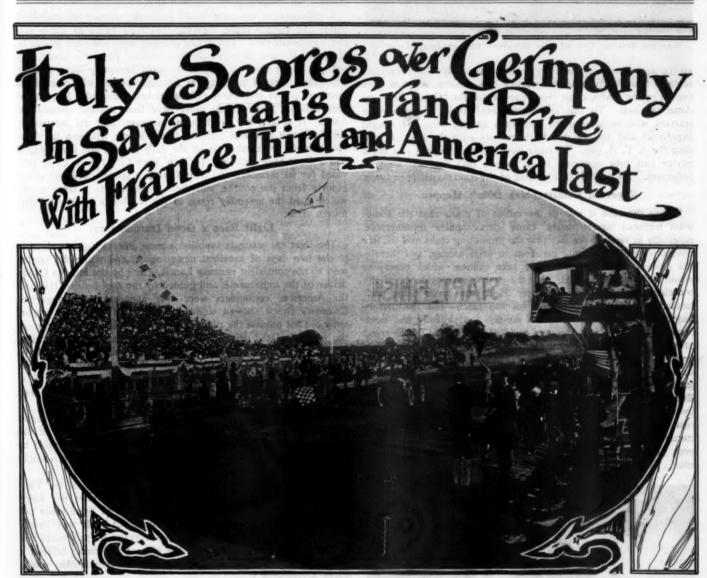
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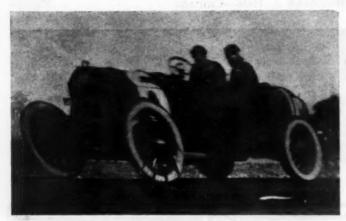


SAVANNAH'S Grand Prize is history. Italy took the honors. Germany was the runner-up. France again lost, for the third time this year under international rules. America—well, she completed the list of twenty entrants. Wagner, the '06 Vanderbilt Cup winner, was the bright and particular star, he driving a Fiat. Hemery, the '05 Vanderbilt king, made the battle fast and furious with a sturdy Benz from Germany. Nazzaro, however, was the man who seemed to have the Thanksgiving Day turkey well in hand, when, alas and alack, a "blow-out" and a too hurried replacement relegated his Fiat to third place. This serious and sad-eyed, yet most capable racing pilot from Turin, had intended if successful to make his appearance at Savannah the last in his notably remarkable career. There's a girl in the case, of course, and she is to be Mrs. Nazzaro. Whether there will

be a special dispensation for another race will have to be answered in Italy. Nazzaro is likely to ask for one more race.

Such a race as Savannah had has never been equaled in some particulars. The city and the county in which it is located worked with might and main, and the results were only such as are always obtainable when conscientious men devote themselves to their task. Tiedeman, and Battey, and Granger and a score of others figure in the list of honor, which might be extended to include all the inhabitants, for certainly the South laid itself out to do the proper thing and it did it genuinely and without hesitation. While it was accomplished in the name of the Savannah Automobile Club, the credit goes far beyond its membership.

It was up to the Automobile Club of America to supply a first-class "show," and this fell to Morrell and his contest com-

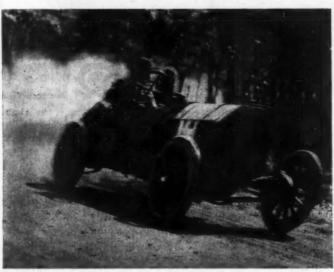


Nazzaro During One of His Greatest Straightaway Flights.

mittee associates. Circumstances may have helped, but the fact remains that fourteen of the world's best drivers, supplied with superb racing crafts, came from Europe for the "Grand Prix" on American soil. To this contingent were added six American starters, who recognized the handicaps against them and sought experience and did not delude themselves with the idea of winning the A. C. A. cup. To enter into a game at which you are a novice and your opponent is an expert, isn't the best kind of judgment. 'Tis possible that nothing of the kind may happen again.

# Expected Catastrophies Didn't Happen.

Before the race it was in the minds of many that the somewhat tortuous course might cause catastrophies innumerable, especially in view of the fact that the promoting clubs and the tire companies had been quite generous in prize money, and thereby the drivers might be tempted to take chances which otherwise would be passed unheeded. But the course gave evidence of the conscientious efforts of Engineer Hull, the turns being well banked, the oiling abundant-a bit too much-and the drivers negotiated the corkscrew curves rapidly and skilfully and none came to grief. In fact, the only accident was caused by the tread of a non-skid tire coming off and striking Erle in the face, thereby causing him temporarily to lose control of his juggernaut and smash into a tree alongside the road. His injuries may be comparatively slight. This was the sum total of the accident column. One mathematician figured over thirty turns, which, multiplied by sixteen, meant considerable of a strain on the drivers. The real contenders, however, were hardened to the trying and circuitous journey, and, as an example, it is said that Hemery made over 50 trial trips, becoming as familiar with the route as possible. This driver is a regular track horse for work.



Wagner Took the Turn Skilfully and Fearlessly.

For the light car race of the day before Thanksgiving, a short 10-mile quadrilateral circuit was utilized, but it was in this contest that the most serious accident happened, caused by the overturning of one of the participating voiturettes.

# Excellent Guarding of the Course.

In the guarding of the course Major W. B. Stevens did the work completely with a comparatively small number of soldiers, though the crowds gathered at various points were smaller and less obstreperous than the hordes which invaded Long Island on the day of the Vanderbilt race. 'Tis possible that the Southrons are more law-abiding, but it is also a certainty that the guarding was more capably attended to than that contributed by the so-called Irish Brigade at the Vanderbilt contest.

A conservative estimate would place the number of onlookers inside the 100,000 mark, figuring that fully twice as many saw the Vanderbilt race. The prices charged were not such as can be obtained in the vicinity of New York, for one could buy seats at \$3 for the two days in the most favorably located stand. The other place of vantage was for those people who came from Southern points and whose railroad tickets included a \$1 place of observation. Some 20,000 must have been massed around the finish. It should not be thought, however, that the interest in the Savannah race was confined to the people who saw it. Generous stories were taken by all the daily papers, and invariably it had a front-page location. In New York City the A. C. A. provided for its members and their friends a score board and direct reports from the course, and these were read to a large crowd which filled the assembly room of the clubhouse on West Fiftyfourth street.

### Light Race a Good Introductory.

The light car struggle supplied a most interesting introductory to the two days of excellent motor sport, and while the verdict went to the consistent running Lancia, made by the famous Italian driver of the same name, and guided by the cool-headed Hilliard, the American contenders were ever apparent and dangerous. Burman's Buick showed wonderful flights of speed, but apparently did not possess the ruggedness of the Italian product, though the well-calculated driving of Hilliard may have been a deciding factor. A mighty good clip was the 52.59 miles an hour of the little Lancia, though the statistics give the fastest lap to the No. 10 Chalmers-Detroit, which went the route at 57.63 m.p.h. Next was Burman's Buick at 55.98 m.p.h., and the Lancia at 54.93 m.p.h. The other little chaps had some fast flights.

In the big race the greatest speed attained, according to Trego's special timing instrument, was the 101.1 miles per hour of the Renault, driven by Strang. The companion Renault, handled by Szisz, was luckless, or otherwise the '06 Grand Prix hero might have been in the forefront of the fight.

The average of the race was even better than that of the Vanderbilt, wherein Robertson's figures were 64.3 miles per hour. The Grand Prize winner traveled at the rate of 65.08 miles per hour, even with the twisting and turning road. It was hardly anticipated that Nazzaro's Florio Cup average of 74.3 miles per hour would be touched, though the city of Savannah offered a special prize of \$2,500 for the man-machine combination which might accomplish it.

# Protests That Were Not Insisted Upon.

Herr Carl Neumaier, president of the Benz firm, on Saturday withdrew the protest he had filed Friday against the award of third place to Nazzaro, which, if allowed, would have given Hanriot, a Benz driver, third money. The protest was based on the Fiat crack having received outside assistance in changing tires on the last round. Nazzaro's defense was that some well meaning soldiers had insisted in helping him, and that being unacquainted with English he was unable to make it clear to them that their assistance endangered disqualification for him. There was some talk after the race of a protest being lodged against Hanriot for obtaining from a touring car gasoline which alone enabled him to complete his final round; but nothing came of it.

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The Big Crowd that Filled the Grand Stand-The Supply Pits Occupied the Foreground.

SAVANNAH, Nov. 26.—Fog again threatened a long postponement of the Grand Prize, just as it had the day before
in the light car race. As it was, when the cars were lined up at
8:30 o'clock, the mist so thickly clouded the course that one
could not see a hundred yards up the road. At the appointed
hour of 9 o'clock conditions were just as bad. Half an hour
later there was some improvement, but then prudence forbade
sending the drivers away into the mist clouds. A quarter of an
hour later Starter Wagner sent Rigal away. By the time the
field of 20 was under way, however, the sun had triumphed and
a bright, balmy day was at hand.

The Start.—All of the twenty entrants faced the starter, who sent them away at minute intervals in the following order: Rigal, Clement; Mulford, Lozier; Seymour, Simplex; Burman, Buick; Haupt, Chadwick; Nazzaro, Fiat; Zengle, Acme; Hemery, Benz; Duray, DeDietrich; Szisz, Renault; Harding, National; Cagno, Itala; Hautvast, Clement; Wagner, Fiat; Hanriot, Benz; Strange, Renault; Fournier, Itala; DePalma, Fiat; Erle, Benz, and Piacenza, Itala. The Americans had the best positions in line, four of them being in the first quintette, the other two starting seventh and eleventh, respectively.

First Lap.—With the field under way in 19½ minutes, the spectators had not long to wait for the head of the flying column to reach the grandstand. It was the Lozier, Mulford having gotten by Rigal. Then came Seymour, who had also passed the Clement crack. Haupt outfooted Burman and Hemery easily disposed of Zengle. All this time DePalma, the former bicycle rider, was coming like a whirlwind from the rear with the Fiat. When the racers had passed and the times were matched up DePalma was the leader, 12 seconds ahead of Wagner, who had beaten Hautvast 6 seconds, the Clement driver in turn leading Hanriot by 2 seconds. Nazzaro and Hemery, the favorites, were content with conservative laps in 23:42 and 23:54, respectively. Szisz was pushing the Renault hard in 22:41, a 67-mile-an-hour clin.

Second Lap.—Willie Haupt flashed to the fore in the second lap with the Chadwick and got a royal welcome from the spectators, who were eager to hurrah for an American as long as they had a chance. DePalma continued to climb up the ladder hand over fist. Scoring 21:36, the fastest lap in the race, equalled only by his own in the seventh round and showing a 70-mile-anhour gait, the Italian-American lad increased his lead over the field. He led Hanriot, who had been going some also, by I minute 19 seconds, a good mile and a half of margin. Wagner, Erle, Cagno, and Szisz were also hitting the pace. Nazzaro and Hemery were driving well within themselves at 65 1-2 and 61 1-2 miles an hour averages. It was a magnificent struggle for the lead of seven leaders traveling at faster than 63 miles an hour.

Third Lap.—Before the third round closed, the three Americans, Mulford, Seymour, and Haupt, had lost their leadership of the procession, and Nazzaro was making the pace. De Palma suffered a five-minute delay and dropped back from the leadership into the ruck. Hanriot and Szisz had fought their way to the front and were having a neck and neck struggle for the premiership, the Benz leading the Renault by but 7 seconds, with Erle in hot pursuit a half a mile further back. Two of the Americans, Burman and Zengle, were out of the race for good. Nazzaro and Hemery and Wagner, the ultimate trio of leaders, were back in the second division, which included Cagno and Strang.

Fourth Lap.—The fourth round saw Nazzaro, Hemery and Szisz leading the procession. They were only leaders, however, so far as the order of passing the stand went, for Hanriot still held the lead, the Benz having covered 100.52 miles in 89:44. Another Benz man, Fritz Erle, was in second place on 44 seconds behind his team mate. The German pair had opened close to a two-minute gap on Nazzaro, who was being hotly pursued by Hemery, a half a minute further to the rear. Haupt was making the best showing of the Americans, the Chadwick being still in the middle of the European bunch with as many behind him as ahead of him.

Fifth Lap.—Hanriot still hung stubbornly to his lead, but by a round in 22 minutes flat, a 68.5-mile gait. Wagner had dislodged Erle from second place. It was now becoming a race that for closeness will long live in automobile history. The leaders were only seconds apart, their order and times being: Hanriot, 1:14:10; Wagner, 1:14:14; Nazzaro, 1:14:44; Szisz, 1:14:46; Hemery, 1:15:02; Erle, 1:15:12, for 125.65 miles. This was probably the most closely contested round of the race.

Sixth Lap.—Nazzaro and Hemery were now driving their cars for all they were worth in an effort to overtake the flying Hanriot. They managed to outpace Szisz, Wagner, and Erle, but Hanriot for the time being was too much for them, for the Benz showed a round in 21:52, which landed it 34 seconds ahead of Hemery and I minute 8 seconds to the better of Nazzaro. Wagner was their pursuer.

Seventh Lap.—Hanriot slowed down a bit in this round, but not enough, however, to cost him his lead. Nazzaro and Hemery were having a fine duel between themselves, the Frenchman leading the Italian by but 14 seconds. Both were hot foot after the runaway Benz. Wagner was hanging fire a bit, but DePalma had got his Fiat going again and was after the leaders in earnest with a lap in 21:36, which tied his record of the second lap. All this time the fat and prosperous veteran Fournier was not making a half bad showing with the Itala, plugging along pretty steadily at a 60-mile-an-hour gait. Seymour was driving

the best of the Americans, Haupt having thrown up the sponge for good during the preceding round.

Eighth Lap.—Before the halfway post had been passed, Wagner, Hemery, and Nazzaro, the ultimate leaders in the race, had fought their way into the three leading positions. At the end of the round, in fact, they occupied the positions named, which were the order of their final finish. Wagner led Hemery 30 seconds, who had a margin of but 10 seconds over Nazzaro. The Fiat crack, following his invariable custom, stopped at the half-way post to replenish fuel. So did the Benz champion. Wagner, however, continued. Hanriot had halted by the wayside and was now in fifth position, Hautvast having passed him. The other racers were now hardly in the running, so far as hopes of the first three places went. In the preceding round, by the way, Szisz had dropped out, having broken a bearing in the front axle of his Renault.

Ninth Lap.—The race had now practically narrowed down to a triangular duel among Wagner, Hemery and Nazzaro.

Wagner lost his narrow lead this round by making his delayed stop for gasoline and oil. Entering the last half of the race, Hemery began to ride like a speed fiend possessed. Covering this lap in 22:22 he completed it with 39 seconds of precious margin to his credit. Wagner having fallen over a minute to the rear of Nazzaro, Hautvast, Hanriot, De-Palma, and Erle were also spurting hard, but they were too far behind for their spring to be of much avail.

Tenth Lap.—The three-cornered fight for the lead kept the spectators "on their toes" all the time. They watched eagerly for the coming of the first of the trio and listened attentively for the figures as they were announced. Wagner got by Nazzaro, but was still 9 seconds behind Hemery.

Eleventh Lap.—In the preceding lap, Wagner had made the 25:13 mile circuit in 22:11. He lowered this to 22:05 in this round, and by his sprint secured a lead of a minute

over Hemery and I minute 19 seconds over Nazzaro. Cagno was put out of the race in this lap by a broken rear spring.

Twelfth Lap.—It was now up to Nazzaro to be up and doing something. He did it. A lap in 22:52 aided by a faltering of Wagner and Hemery gave him the lead, and a pretty good lead, too, considering how near the finish was. In fact, the score board was completely upset, Nazzaro leading Wagner by 2 minutes 39 seconds and Hemery by 2 minutes 44 seconds. It looked to be all over but the shouting for Nazzaro.

Thirteenth Lap.—Increasing his pace to a 23:38 lap, Nazzaro pulled still further away from Hemery. Wagner had slowed down to 24:45 and wound up the round I minute 5 seconds behind Hemery, who was 3 minutes 39 seconds behind Nazzaro. It looked to be more ever a cinch for the Italian.

Fourteenth Lap.—Hemery spurted gamely in this round, scoring 22:48 for the circuit and cutting down Nazzaro's lead to 2 minutes 27 seconds. Wagner went even faster, and at the finish of the lap had reduced the Benz's lead to 29 seconds by a round in 22:12, his fastest circuit so far.

Fifteenth Lap.—Nazzaro, having the race well in hand, slowed down a wee little bit. Wagner quickened his pace to 22:11, his fastest in the race, and Hemery raised his gait to 22:38. The two French pilots were making a magnificent effort to overtake the cool-headed Italian. To what a high pitch of excitement the closeness of the struggle had wrought up the spectators can easily be imagined. All hands were on their feet watching up the stretch for the appearance of the leader and

straining their ears to catch promptly the figures the timers gave out.

The Finish.—Nazzaro entered the final round with a lead of 1 minute 52 seconds over Hemery, whose margin over Wagner's was but 2 seconds. Barring one of those hundred accidents that can befall an automobile racer, Nazzaro was the winner. Within 2 minutes after Hemery and Wagner had passed the stand, the megaphone man fired a bombshell into the crowd.

"Hemery has passed Nazzaro!" A telephone man had sent the message, but he gave no particulars. The crowd refused to believe its truth until the white Benz was seen coming down the stretch. Nazzaro was, indeed, beaten, but Nazzaro had not started until 6 minutes after Hemery, and the race was not over. Then came Nazzaro, the first of the trio to start. Then came at last, after what seemed hours of suspense to the waiting crowd, Wagner. There was a deathlike silence, and then some one in the Fiat pit cheered. Then came the megaphoned time. Wagner had won. He had beaten Hemery by 56 seconds and Nazzaro by

2 minutes 27 seconds.

A puncture, in fact, two of them, had been the Italian's undoing. A tire was quickly replaced, but Nazzaro had gone but a short distance when he discovered that the tire he had just put on was soft and another change was necessary.

The finish of Hanriot, who was fourth, was ludicrous. His Benz had run short of gasoline at the head of the slight decline forming the homestretch, and it literally coasted in. Its crew swayed their bodies and the crowd "rooted" to help it along. It just managed to get across the tape.

At the conclusion of the race Wagner and Hemery were brought before the "royal box" in their cars and presented to the spectators, who cheered them heartily.

The first four finishers were equipped with Michelin tires and divided among themselves \$3,800 in prizes given by the Michelin Tire Company, made up of \$2,000, first; \$1,000, second; \$500, third; and \$300,

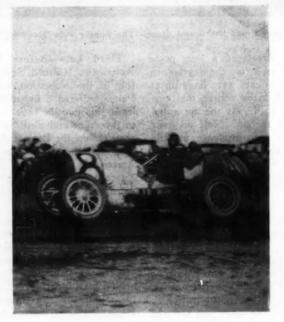
fourth. Fifth and seventh places fell to cars fitted with Dunlops. Sixth, eighth, and ninth finishers were equipped with Michelins.

All nine of the cars that were timed for the entire 402.08 miles were fitted with Bosch high-tension magnetos, thus winning \$500, first; \$250, second, and \$100 for third, offered by the Bosch Magneto Company.

Eight thousand dollars in cash was put up by the Automobile Club of America, which was won as follows: Wagner, Fiat, first, \$4,000; Hemery, Benz, second, \$2,000; Nazzaro, Fiat, third, \$1,000; Hanriot, Benz, fourth, \$750; Hautvast, Clement-Bayard, fifth, \$250. The money will be handed over to the winners at the Automobile Club of America's clubhouse Wednesday.

With Governor-elect Brown as the chief guest of honor, it was evident that the State had lent itself in making the success one that encompassed Georgia.

In its comment upon the race, the Savannah *Press* editorially said: "From the very first the whole city entered into the movement with the finest possible civic spirit. No work was too hard, no concession in reason too great, to meet with an instant and favorable response. City and county authorities have pulled together as one man, and the military has responded promptly and gladly. Tens of thousands of dollars have been advanced by the various local interests, not for the purpose of taking a penny of profit directly, but by way of making Savannah known to the world as one of the very 'biggest,' most energetic, most virile cities of its size on the map. In this Savannah has succeeded."



Hemery, Who Looked a Sure Winner.

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NOTHING shows more conclusively the excellent workmanship in many of the high-grade racing cars than the fact that nine out of the twenty that started in the 402-mile Grand Prize race actually finished the course and three others were running in good shape when the referee declared the race off, making twelve out of twenty or 60 per cent. in commission after the gruelling experiences over the rough roads for almost seven hours. Of the eight that dropped out, one was due solely to an accident, namely No. 19 Benz, driven by Fritz Erle, which was overturned on the White Bluff road by the tire tread on the right rear wheel coming loose and striking Erle, who was knocked unconscious. This left but seven cars actually put out of the running because of troubles with the machines or the drivers. Two of these went out through broken springs, one through oiling troubles, one because of a broken camshaft, one a broken ball bearing, and two others because of troubles caused through running off the road.

That the foreign cars were in a class by themselves was evident from the completion of the second lap, when they began setting a pace all of their own, and running with the utmost regularity. The motors ran perfectly, the drivers not having to raise the hood throughout the entire race with several of the cars and having no other task than guiding them on the road, taking on gasoline and oil, and repairing tires. In the sixteen laps that each of the nine foreigners, to finish, flashed past the grandstand not a single instance of running on three cylinders occurred, and only one case of a motor in the symptoms of distress appeared. The cars were built for the task and trained to it. Before any of the cars contested in their first races this year they were given thousands of miles of touring work through Europe, when the drivers had a chance to learn every detail of them and when the cars had an excellent opportunity to get worn in.

The troubles with the American cars in most cases were due to lack of preparedness: either the cylinders were not properly worn in, the lubricating means had not been sufficiently tried out, or other parts duly tested. In connection with the American machines it must be remembered that three were stock machines with a few racing necessities added, and the others semi-racing cars which were but natural evolutions of stock machines and not out-and-out racing locomotives built expressly for the big road races of 1908. It is unusual in road races for cars to be eliminated because of broken springs, which, however, was due to the rough condition of parts of the course and some of the bad trolley crossings, two of which the cars had to cross.

Wagner with the winning Fiat had few other troubles than tires and stops for gasoline and oil. His motor sounded the best of the three Fiats, although he did not make as fast time as did DePalma. Wagner's motor had a very regular purr which was rhythmical to the extreme and an examination of the complete car at the end of the run failed to disclose any evidence of trouble to the running gear. In the twelfth lap when stopping at the grandstand pits to take on oil and a new tire the

mechanician examined the jackshaft at the left end and used a bit of rope in tying up apparently some small part of the chassis which had nothing to do with the jackshaft. This was the only evidence of trouble the car had during the entire race.

Hemery's No. 8 Benz did not even give that much trouble, and the only stop made at the grandstand was in lap eight to take on gasoline and oil. Nazzaro with third honors had an equally clean record, his car running perfectly throughout the contest and tires only being the troublesome factors. Hanriot with No. 15 Benz in the first seven laps looked like a certain winner and was leading in time for several successive laps and the Trego timer reported him making the mile straightway at a speed of 100 miles per hour. But the pace broke the oil lead from the hand pump to the crankcase, and a delay of nine minutes in the eighth lap and seven minutes in the ninth frosted the fondest hopes of his admirers. Having to change two tires in one lap at this time was the expected result of the terrific pace he had set and still further separated him from the premier position. He further lost 2 minutes 31 seconds in the eighth lap when taking on gasoline and oil and ran out of gasoline at the end of the last lap, and his car was barely able to coast over the finishing line, which made his last lap about 3 minutes slower than his average.

Hautvast, in No. 13 Clement, drove a remarkably consistent race and had the Clement machine working at its limit most of the time. He made but two stops in front of the grandstand pits, one in the ninth lap when two minutes were consumed in changing a couple of rear tires and in taking on of supplies. Again in the last lap he stopped for 25 seconds. Lewis Strang, the winner of first honors on the same course last March in the stock chassis race, was in hard luck with his Renault machine, and although he made the fastest miles on the homestretch, running as high as 101.7 miles per hour, he never averaged high on his laps. He was over 25 minutes on the first lap and came past the grandstand with the bonnet off and completed the race without it. On the third lap he lost three minutes at the grandstand pits in changing a left rear tire; at the start of the seventh lap he lost nearly 15 minutes with tires and engine troubles.

Rigal in No. I Clement started off with bad luck in the first lap, when he was compelled to put on a second magneto, the first one going out of commission and costing him seven minutes at the start of the race. On the eighth lap he changed the two rear Dunlop tires and took on gasoline and oil, the three operations being completed in 3 minutes and 15 seconds, and the one man doing the tire changes in the minute. Rigal's car was not so fast as the Fiat or Benz but its regularity of running was such as to bring forth cheers from the grandstand as soon as it realized what the machine was doing.

After Rigal in the honor roll came Henry Fournier with his shaft-driven Itala, the only one of the three cars of this make to be running at the end of the race. For the first eight laps he drove consistently, doing all of them in 24 minutes and a few

seconds; but after this his pace was slower. Laps 9 and 10 were slow, due to tire changes and taking on fuel, and the last six laps averaged more than a minute slower than the pace he set in the first half of the race. Cagno, driver of No. 12 Itala, withdrew at the end of the tenth lap because of breaking the long leaf in the left rear spring where it turned around the shackle bolt. The four springs on this car were completely taped, as were the shackle links and bolts, and it required the cutting off of this taping before the exact nature of the break could be discovered. When the trouble was detected the car was driven off the course at the end of the pits, where it remained until the completion of the race. Piacenza driving the third Itala No. 20 went off the road on the Isle of Hope turn and withdrew from the race and it was impossible to discover the exact cause.

Duray, driving No. 9 De Dietrich, met with misfortune in lap five, when the radius rod on the right side broke, allowing the jackshaft sprocket to pull back toward the rear wheel, after which the driving chain broke and cut Duray severely on the right arm above the elbow. He drove to the grandstand, where the wound was dressed, after which the broken parts of the car were repaired, 21 minutes 15 seconds being needed, and which



Strang's Renault Reached the Highest Recorded Speed.

was enough to put him out of the race. Later in the tenth lap three minutes were lost in taking on gasoline and changing a rear tire, and again in the twelfth 1 minute 48 seconds were needed in wrapping the injured arm. He had completed fourteen laps when the race was called off.

De Palma in No. 18 Fiat was picked by many as the possible winner of the race, and the way he reeled laps off at the start did much to convince others that the confidence many had placed in him was well placed. He did four laps in less than 22 minutes to the lap and there was only one lap made by any of the other drivers under the 22-minute mark, and that was by Hanriot's No. 15 Benz, which set the sixth lap at 21:52, whereas De Palma placed the mark at 21:36 in the second lap and duplicated it in the seventh and made a couple of other laps in 21:48 and 21:55. But the pace worked havoc with his oiling and tires and in the third lap his car actually roze for a time because of not having fed enough oil to the cylinders. He required 47:54 for the lap during which time he was lapped by nearly all of the others and lost every hope of getting within the first five. To add to this loss of time was 4 minutes 15 seconds in lap five, when he changed a tire and took on gasoline. In the sixth lap 7 minutes 30 seconds were lost in oiling the motor and overcoming the difficulties caused by lubrication. In the ninth lap 5 minutes were lost in taking on gasoline, oil and water. In the twelfth lap I minute 5 seconds were needed to take off an old tire from the car and hang a new one on; and in the fourteenth another 2-minute stop was needed for taking on more oil. It may frankly be stated that De Palma's entire troubles were due to the terrific pace he set and not increasing the oil feed in proportion to it. To add to these difficulties he had troubles galore. At the finish of the fifth lap when changing a right front tire the big

jack slipped letting the rim of the wheel down on the ground and making the car axle too low to get the large lever jack under and making it necessary to use a small screw jack to raise that side of the car enough to get the lever jack in position. Again at the end of the sixth lap when changing tires he changed the left front and right rear and put a couple of new ones on the back of his car. He then decided to change the left rear and in doing this the first demountable rim with tire he tried was too tight and after kicking for some time to get it on had to roll it back to the pit. The second one he tried was no better and after wasting time he called for a third one which slipped on easily.

# Something Concerning the American Cars.

Of the six American cars contesting not one finished the sixteen laps, but two were running at the finish, the Lozier and the Simplex. The Simplex suffered because of new eylinders which had not been worked down to the smooth finish necessary. The car handled by Seymour made good time in the first three laps, but at the end of the fourth had to stop at the pits for water and oil, losing exactly 5 minutes. A new tire was taken on at the same time. In the eighth lap another stop of 4:30 seconds duration was made during which two old tires were thrown off the tire rack on the car and three new ones placed on it; this done gasoline, oil and water were taken on. Again in the tenth lap a 5-minute stop was made at the pits when a new tire was taken on and gasoline, oil and water replenished. None of Seymour's laps were made in less than 23 minutes, and the car, barring its motor troubles, as already stated, had no trouble whatever, but the frequent stops for tire changes. He was in the fifteenth lap when the race was called off and running fast.

The Lozier was the first car to stop in front of the grandstand, halting for one minute at the end of the second lap to take on water and put on a new rear tire. On the third lap another stop was made, and again in the eighth. The car plainly showed the results of not being ready for the fray, and like the Simplex had it had 2 or 3 weeks workout there would be a different story.

The six-cylinder Chadwick, driven by Haupt, after making the first two laps in a few seconds above the 23-minute mark, stopped at the end of the third lap and worked some time on the emergency brake lever. The third lap was two minutes slower than the previous two, and the fourth still slower. During the fifth a telephone message announced that the car had quit the race due to the hand oil pump becoming disabled, which resulted in the reported burning out of one of the motor bearings, presumably a connecting rod one. General regreat was expressed on every hand that Haupt should have troubles of the same nature as De Palma, which were not in any sense due to faulty construction but rather to feeding too little oil.

The Acme six, driven by Zengle, in its first two laps gave promise of finishing the course and about a 26-minute per lap pace, but in the third lap broke the right front spring and was over 2 hours making the circuit. When it appeared at the grandstand the frame at that point was supported on a block of wood that was ropped and strapped in position. With this handicap the car made four more laps close to the 27-minute mark, but finally dropped out a couple of hours before the finish of the contest, the pace being too fast on such spring suspension.

Harding in the six-cylinder stock National car got into difficulties on the first lap when some waste got into the gasoline line requiring over 55 minutes to make the lap and remove the impediment. After this the car had a little carbureter trouble, but was running with good regularity, and during the eighth, ninth, tenth, and eleventh laps was running a neck-and-neck race with Seymour in the Simplex and caused the grandstand to begin computing on which of them would be the leader in the American car class. In the eighth the Simplex led by less than a minute. In the ninth it had increased this to 69 seconds. In the tenth it dropped to 56 seconds, but by the end of the eleventh it was increased to over 3 minutes. At this point the National stopped in front of the grandstand and pulled off the course, where it remained until the completion of the race, the apparent trouble being the disabling in some manner of the camshaft of the motor.

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# RACE FOR THE GRAND PRIZE OF THE AUTOMOBILE CLUB OF AMERICA, SAVANNAH, GA., NOVEMBER 26, 1908.

Va.	CAR	Driver	25.13 Miles	50.26 Miles	75.39 Miles	100.52 Miles						251.30 Miles			326.69 Miles			402.08 Miles	Total Time	niles hour
	CAR	Dilver	1st	2d	3d	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	Time	Y "
4	FIAT	Wagner	22:30 22:30		69:46 24:43	92:14 22:28	114:14 22:00	138:50 24:36	163:07 24:17	184:57 21:50	208:47 23:50	230:58 22:11	253:03 22:05	279:31 26:28	304:16 24:45			370:31 21:52	6:10:31	65.0
8	BENZ	Hemery	23:54 23:54		70:27 22:03	92:39 22:12	115:02 22:23	137:26 22:24	160:20 22:54	185:27 25:07	207:59 22:32	230:49 22:50	254:03 23:16	279:58 25:55	303:11 23:13	325:57 22:46	348:37 22:40	371:27 22:50	6:11:27	64.9
6	FIAT	Nazzaro	23:42 23:42			92:01 22:31	114:44 22:43	137:40 22:56	160:46 23:06	185:37 24:51	208:38 23:01	231:32 22:54	254:22 22:40	277:14 22:52	299:52 22:38	323:32 23:40	346:45 23:13	378:47 32:02	6:18:47	63:6
5	BENZ	Hanriot	22:38 22:38			89:44 22:18	114:10 24:26	136:02 21:52	158:38 22:36	189:57 31:19	219:27 29:30	241:47 22:20	265:09 23:22	288:53 23:44	312:44 23:51	336:39 23:55	360:43 24:24	386:12 25:29	6:26:12	62.4
3	CLEMENT-B'D	Hautvast.	24:36 24:36	48:41 22:05		99:17 26:11	123:24 24:07	147:31 24:07	171:23 23:52	175:19 23:48	221:11 25:52	244:10 22:59	268:49 24:39	293:00 24:11	318:08 25:08			394:06 24:53	6:34:06	61.2
6	RENAULT	Strang	25:13 25:13			96:23 25:54	119:10 22:47	141:55 22:45	165:30 23:35	204:52 39:22	227:52 22:40	258:18 30:36	282:03 23:45	306:08 24:05	330:03 23:55	356:47 26:45	378:58 22:11	403:37	6:43:37	59.7
1	CLEMENT-B'D	Rigal	32:23			106:46 24:54												405:43	6:45:43	59.4
7	ITALA	Fournier	24:30 24:30				123:41 25:04	148:38 25:57	173:21 24:43	197:38 24:17	225:23 27:45	252:53 27:30	277:59 25:06	303:57	329:51 25:54	355:23 25:22	381:20	406:32 25:12	6:46;32	59.3
8	FIAT	DePalma.	22:18			113:36 21:48	40:14 26:38	169:33 29:19	191:09	213:04	243:54 30:50	266:31 22:36	289:05 22:34	315:28 26:23	338:30 23:02	363:43 25:13	388:59	411:34	6:53434	58.0
9	DE DIETRICH	Duray	24:05			105:38												ng at fir	nish of ra	ice.
3	SIMPLE X	Seymour	24:25 24:25			108:59	139:26	169:06 29:40	193:56 26:50	251:50 57:54	278:14 26:24	317:14	343:48 26:29	376:26 32:43	401:02	426:25 25:23	Runni	ng at fi	nish of ra	ice.
1,1	NATIONAL	Harding	55:01 55:01		107:25		163:28 26:48	198:21 34:53	225:32	252:34 27:02	279:23 26:51	318:10	345:49	Out; 1	roke ca	mshaft			We ha	
9	BENZ	Erle	23:12			90:28	115:12	140:36	164:00 23:24	186:11	210:07	232:33	Out; d	river h	it by tr	read of	tire an	d car w	ent off r	oad a
12	ITALA	Cagno	24:11 24:11	46:40	69:25	95:21	121:08	144:20	167:27	190:49	217:11		Out; t			ring.	120	2	13	
2	LOZIER	Mulford	25:11	63:07	101:03	128:45	175750	310:23	337:43	366:53	394:02	429:11	Out: r	unning	at finis	h of ra	ce.			
0	RENAULT	Szisz	22:41 22:41	45:16	67:33	92:24	114:46	141:12	Out; 1					wheel.			40			
7	ACME	Zengle	27:22 27:22	54:04	181:31	208:53	236:45	263:52	Broke	right f	ont sp	ring in	3d lap,	but fin	ally go	t going	again.	u u		
20	ITALA	Piacenza	24:41 24:41	51:31			125:48 27:41		aff the r	road at	Isle of	Hope.	4	112						
5	CHADWICK	Haupt	23:51	47:17			Out. E	Burned	out con	necting	-rod be	aring.							19	
4	BUICK	Burman	31:44	59:56	Out; b			County	Parm.	*				4.1			5.24	76	13	

. 3	HOW	THE	LEAD	SHIFTED	DÜRING	THE	RACE
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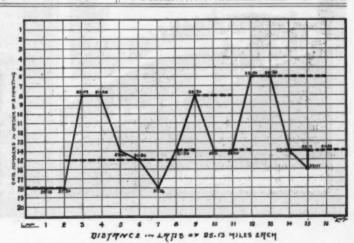
No. CAR	Driver	1st	2d	3d	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16t
14 FIAT	.Wagner	2	2	6	4	2	-4	4	1	3	2	1	2	3	3	3	-1
8 BENZ	. Hemery		12	7	6	- 3	2	2	2	1	- 1	1	2	2	2	2	2
OFFIAT	.Nazzaro	. 6	7	5	3	3	3	3	3	- 2.	- 3	3	- 1	1	1	1	3
5 BENZ	. Hanriot	3	3	1	1	1	1	1	5	6	5	- 4	4	4	4	4	4
3 CLEMENT-B'D.	. Hautvast	13	13	11	11	9	9	8	7	7	6	5	5	5	5	5	- 5
6 RENAULT	.Strang	16		8	8	7	7	6	9	9	9	8	8	8	8	6	6
1 CLEMENT-B'D.	.Rigal	19	17	15	14	12	11	10	10	10	8	7	7	6	6	6	7
77ITALA	. Fournier	12	14	12	10	10	10	9	8	8	7	6	6	7	7	8	8
8 FIAT	. DePalma	1	- 1	16	16	10 15 13 14	10	11	-11	11	.11	9	9	9	9	9	9
97DE DIETRICH.	.Duray	. 9	10	14	16	13	14	13	12	12	12	10	10	10	10		
3 SIMPLE X	.Sevmour	11	11	9	15	14	12	12	13	13	13	11	11	11	11		
INATIONAL	. Harding	20	20	18	18	16	15	15	14	14	14	12					
9 BENZ	. Erle	5	5	3	2	6	5	5	- 4	4	.4						
2 TTALA	.Cagno	10	6	4	7	8	8	7	6	5	10						
2 LOZIER	. Mulford	15	19	17	17	17	17	14	15	15	15						
O RENAULT	Szisz	4	4	2	5	4	6		-								
7 ACME	.Zengle	17	16	19	19	18	16										
O TTALA	. Piacenza	14	15	13	9	11											
O ITALA.	. Haupt	7	8	10	12												
4 BUICK	.Burman	18	18	-0											-		

# FASTEST LAP OF EACH DRIVER.

No.	CAR	Driver	Fastest		Miles Hour
14 TTA	T	Wagner			69.16
		Hemery		.3	68.36
		Narraro.		Car.	66.96
		Hanriot		6	69.15
13 CT	PMPWT DID	Hautvast	22:05	9	60 95
				15	67.96
		Strang		13	07.90
		Rigal		12	64.40
		Fournier			62.92
18 FIA	T	DePalma.	21:36	2 & 7	69.80
		Duray		9	65.19
3 SIM	PLEX	Seymour	23:43	3	63.60
11 NA	TIONAL	Harding	25:45	2	58.53
		Erle		. 8	67.96
		Cagno		2	67.07
		Mulford		1	59.86
		Szisz		3	67.56
		Zengle		1 8-4	55.08
		Piacenza		100 4	64.14
20 IIA	ADTHICK	Placenza.	23:17		
		Haupt		4	64.30
4 BU	ICK	Burman	28:12	2	53.42

# BEST SPEEDS FOR A FLYING MILE.

Obtained by Frank H. Trego's Electro-Magnetic Timer on a Measured Part of the Course



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HILE in Savannah and since I returned to New York, the same question has been put to me, not once, but I should say a hundred times: "What do you think of the big race?" It occurred to the editor that it might interest some readers of THE AUTOMOBILE to know what my impressions were down there. Not that my humble person is of much importance by itself, but merely because I was one of the very few French visitors in Savannah, and also on account of my close connection with last year's Grand Prix of the Automobile Club de France. Many people on this side not being aware of the fact, perhaps I may be allowed to mention that I was in charge of the general management of this event, which took place on the Circuit de Dieppe, and, by the bye, resulted in a brilliant win for Nazzaro. It was a new move on the part of the French club to nominate a special man to superintend the work, with results that for the first time in the history of automobile racing on our side the 1907 Grand Prix showed a profit, and a handsome one, too,

To revert to the race under notice, it is also a curious fact to record that outside of the competitors, I must have been the only person to witness all three of the big speed races held this year, the first in date being the French Grand Prix, which was again held in Dieppe and won by Lautenschlager on a Mercedes; the second being the Florio Cup, which took place near Bologna, Italy, and saw Nazzaro again a winner; and the third, this last Savannah event. It may seem strange to many that I fail to mention the Vanderbilt Cup race in this enumeration, but it would hardly appear a really international affair to eyes that are European.

Having therefore witnessed the above trio of big 1908 races, I am exceedingly pleased to say right here that the first American Grand Prize favorably compared with the other two, both in regard to sporting interest and management. In fact, I doubt if there ever was a better conducted affair, and will confess that I have not seen or heard of any. Of course, as will always be the case with such a huge undertaking as the organization of a long distance motor speed contest on the road, some minor points may have been defective, but I want to say that they were few and far between—fewer, in fact, to my mind than was the case in either Dieppe or Bologna.

On the race itself, nobody expects me to dwell at any length, since this has been done thoroughly by men more able than myself. While the field of competitors could not be compared to the 48 starters in the French race, when outside of last Thursday's lot such makes as Mercedes (winner), Panhard, Brasier and Opel also came to the post, its standard was distinctly higher than the field for the Florio Cup event, out of which not only the above makers, but also the Benz and Renault stayed. It looked "classy" enough and well deserves to rank as the second biggest race of the year, as far as sporting interest goes, while

I again repeat that it was second to none in the matter of excellence of the promoting arrangements.

It may look selfish on my part, but what impressed me as being very near perfection was the press accommodations. It seemed a perfect treat to work with such facilities, comfortably seated in front of a desk, with a splendidly clear view of the course, and all information supplied you. In fact, it was too easy, I must suppose, for it so happened that I got the name of the Grand Prize winner cabled to Paris before the race was won. In other words, through a miscalculation on my part, just before Wagner made his sensational final appearance, I made out Hemery to have won by a small margin and flashed the news over. Luckily not more than two minutes elapsed before I corrected the error, but for some little time there must have been considerable jubilancy in the German camp over on the other side. Anyhow, this is a personal matter. But speaking again of the press arrangements for this race, I would like to point out that on our side the trouble comes from the fact that there are so many "dead heads" who manage to squeeze in as so-called representatives of so-called newspapers, while it seemed to me in Savannah that everybody on that press stand meant business, and did it, too.

It was a bit novel to me that every one seemed to be not only delighted, but also highly surprised at the way the course was guarded and kept clear. In Europe, ever since the bloody Paris-Madrid race ended the chapter of town-to-town speed competitions and made way for the circuit road races, I have never seen or known it to be otherwise. But I understand that such has not by far always been the case in this country, and it being so, the satisfaction of the Savannah promoters was only natural. Perhaps we, too, in France shall have our share of trouble in that line, for just before leaving Paris I learned that a decree rendered by General Picquart, the Minister of War, stated that the army would no longer be used for anything but purely military purposes. Therefore, the French club may confront a very bothering difficulty in the promotion of the big race next year near Angers, as far as guarding the course goes.

Speaking of the course reminds me that I wish to say a word about the one in Savannah. It certainly was a tricky course on account of all the sharp turns, and now that it is all over, I wish to confess that I had my fears about accidents. Not only me, but the competitors themselves, and this is clearly shown by the fact that during the evening before the big race, two of the most prominent among the French drivers (everybody will understand me omitting names) gave me all necessary instructions in case something should happen them. At the same time three of the mechanicians started a \$100 pool, the proceeds of which were to go to the widow of whoever happened to be killed in the race. All this would look ghastly enough if the event were not over and we did not know that no really serious mishap was



Duray, One of the Favorites in the Early Betting.

recorded. This goes to show not only what skill must drivers in a big race possess, but also that even those speed monsters called racing automobiles are marvels as far as running, reliability, and control go. Now, again, the course was exceedingly well arranged. Of course, it was tricky and difficult, and nobody could make it smooth and easy. But nobody either could have got it nearer perfection than the people who worked on it did. Some of those banked turns were perfect beauties, and going round them at top speed with an experienced driver, such as Hemery, like my friend Batchelder and myself did before the race, was a treat.

Another point where the A. C. A. and the Savannah promoters got us Europeans badly beaten is in the oiling of the road. Despite numerous inquiries, I am yet at a loss to understand the exact composition of the material used in Savannah, but I noticed that there was not a speck of dust on that homestretch, even when three cars came tearing along it, while on our side dust has always been a cause of nuisance. In fact, this year on the Dieppe course, despite liberal tarring, it was simply terrible.

The timing and scoring board arrangements were good, although I doubt if many people on the grandstand could see the figures clearly enough on the board. It also occurred to me, who sat in the press stand protected by a roof, that some of the ladies on the other side of the road must have felt that "Monsieur Phébus" was a bit too attentive. On both days, once the fog had lifted, it was very hot, and I am sure that people sitting in that grandstand would have enjoyed a canvas over their heads. This is a point on which Old Europe scores; in fact, the grandstands at both Dieppe and Bologna were to my mind far too luxurious and expensive for such a temporary affair as a two-day automobile meeting. But I suppose none of the spectators complained; at any rate, there may be quite a "happy medium" between the two ways of doing it.

A matter of great satisfaction to me was the superiority apparent, as regards the interest for onlookers, by racing held on



Showing the Road Markings of the "S" Turns.

a comparatively short circuit. For several years I have been, on the other side, fighting for a reduction in the length of the course on which the road races are held, but with only partial success. As an example, I would say that in 1906 the French Grand Prix was held on LeMans circuit, which measured over one hundred kilometers (63 miles) for one lap. The year after, under my management, the Dieppe course was brought down to 77 kilometers (48) miles), but we are yet far from the 25-mile circuit arranged for last week's big race in Savannah. It falls under common sense that the people who put up their money to see automobile races-and the enormous expense connected with the promotion of same shows that as many as possible are required will enjoy the sight much more when cars are seen to pass frequently and their struggle can be more easily followed. This was the case last Thursday, and more so again the day before, as the small car event would have proved entirely tedious had it not taken place over a very short circuit. Without a doubt, here we have one of the reasons of the meeting's success, and also another of the points you do better here than on our side.

In conclusion of this too lengthy article, I would really like to say a word or two of the way the Southern people treated the visitors, and more specially the foreigners. All the drivers, who were in Savannah a considerably longer time than I was, expressed themselves as highly delighted at the reception accorded them. They even hinted about not being used to this on our side of the



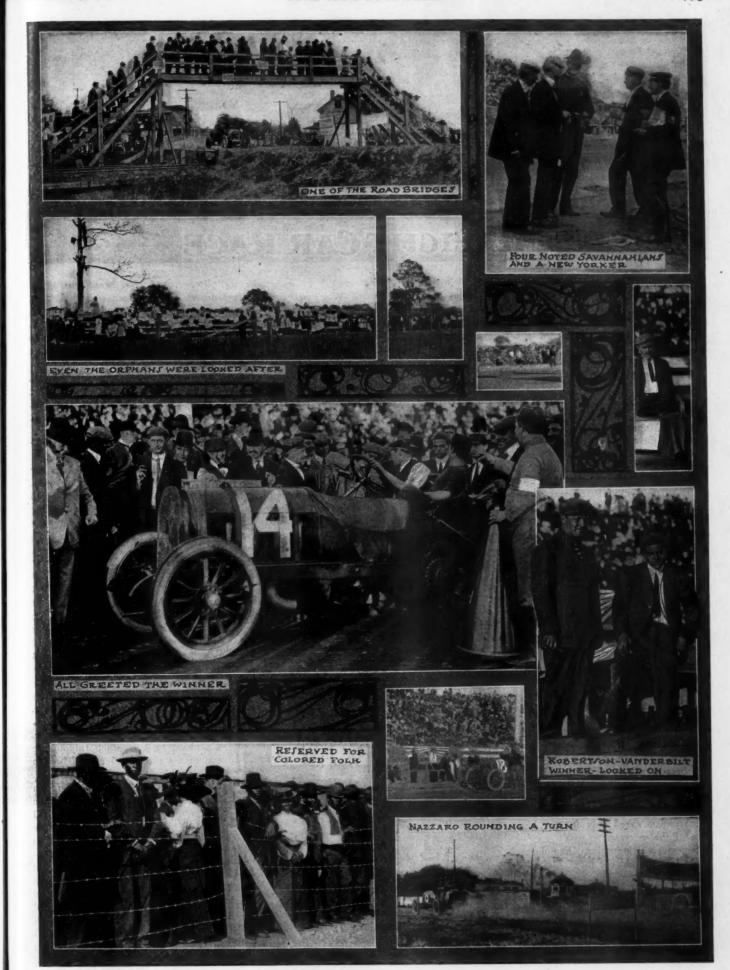
Seymour and Simplex Which Made Best American Showing.

ocean, which was perhaps hard on us promoters, but may be true. As an instance, the attention showed the drivers in Thursday's race in providing them with specially reserved seats from which they could view the proceedings on Wednesday, was an unprecedented thing at home, and it certainly pleased them immensely, for they expressed thanks most heartily.

As for Southern hospitality, I suppose all has been said about it, and I could only repeat the tale of all visitors down there. Indeed, the Savannah Automobile Club members were indefatigable in their desire to attend to all the wants of this guests, and I wish to say the same of all the A. C. A. officials. As far as I am concerned, it was a great tribute paid to the paper which I had the honor of representing on this occasion, and it is a pleasant duty for me to return thanks to all the American gentlemen who contrived to make my work easy and enjoyable.

The European drivers returned to New York last Monday highly delighted with their Southern trip. The only exception was Fritz Erle, the German driver, who was injured in the race and whom the doctors will not allow to take the trip yet. He is in the Savannah Hospital, and, in fact, the latest news made him out to be not near so well as could be wished for.

All the other drivers leave New York on the French steamer Lorraine which sails to-day (Thursday) for Havre. They were the guests while here of several functions including the Automobile Show's luncheon on Tuesday, dinner at Paul Lacroix's the same day, lunch at the A. C. A. club house on Wednesday, and dinner with the Fiat Company as a conclusion of their stay.



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SAVANNAH, Nov. 25.—W. M. Hilliard, of Boston, driving the Lancia Lampo, entered by the Hol-Tan Company, of New York, won the international stock car race to-day. He covered the 196-mile course in 6 h. 43 min. 33 sec. Robert Burman, in a Buick, was second in 6 h. 49 min. 49 sec., and L. B. Lorimer, in a Chalmers-Detroit, was third in 6 h. 53 min. 55 sec. The winning car was equipped with Continental tires, and the second and third with Michelins.

Hilliard, the victor, is a veteran at road and track racing. He began his racing career by winning the Boston Herald trophy at the 1905 Readville track meet. On July 15 of that year he won the Mount Washington hill climb in a Napier. Later, he raced on Ormond and Atlantic City beaches. He was a contender in the Briarcliff at the wheel of a Shawmut car, and also drove a Lancia at the opening of the Long Island Motor Parkway.

The light car race, which was promoted by way of a curtain raiser to the Grand Prize, was run over ten laps of a 9.8 miles rectangular course. It was well attended by Savannahans and by the visiting throng of Northern and Western racegoers. Although the grandstand held 4,000 and the bleachers 5,000, the Georgians and Southerners generally awaited the running of the Grand Prize itself.

At 10 o'clock, an hour before the time set for the light car race, the chances looked slim for the impatient squadron of

little fellows being sent off on time. A fog, which had been prevalent mornings for several days was again doing business at the old stand. But a quarter of an hour before the appointed starting hour Old Sol triumphed and sent the mist clouds scampering away into nothingness. The crowd began to pour into the aisles and boxes, and when II o'clock came more than half filled the granstand seats and boxes. The monster bleachers, however, carried not over a couple of thousands of their 10,000 capacity. It was for these that the railroads had sold coupon tickets, and the big crowds of excursionists cared only for the big race of the morrow.

Seventeen nominations had been made for the light car race. Only 15 faced the starter. The American Aristocrat entrant had telegraphed the management three days before that it would not be on hand. The Gregoire arrived on Sunday, but came in such an impossible condition that George Robertson very properly

refused to undertake its pilotage, the risk being too great. "Wag" had had the cars drawn up in the order of their start for near half an hour. Sharp at II o'clock he sent the S. P. O. away. The others were dispatched at half-minute intervals, except that Cameron started a minute behind Bergdoll and Burman a minute behind Poole, the American Aristocrat and Gregoire being counted the same as though present.

The order of the start was: Connors, S. P. O.; Hilliard, Lancia; Bergdoll, Chalmers; Cameron, Cameron; Poole, Isotta; Burman, Buick; See, Maxwell; Lorimer, Chalmers; Hearne, Buick; Costello, Maxwell; Burns, Chalmers; Easter, Buick; Munweiler, Maxwell; Jeffers, Buick; Kelsey, Maxwell.

The crowd had not many minutes to wait for the appearance of the first car. It was the Lancia. The troubles of the S. P. O. had begun early and in the first round it had dropped to the tail end of the procession, so far as the order of running went. Lorimer held his place behind Hilliard. Burman made a splendid rush from sixth to third place in line, the Buick far outstripping all the others with an initial lap in 10:58, a 53-mile an hour rate from a standing start. Little Ewing Easter, the New York midget, was second in actual time for his Buick.

It was up to Hilliard to be doing something, so he quickened his pace to 10:42. Even this failed to dislodge Burman from what seemed a good hold on first place. Another Buick, driven

by Jeffers, took Easter's place in third position. Munweiler forced his Maxwell from ninth to fourth place with a lap in 10:05, the fastest to date, and, in fact, the second fastest round in the whole contest.

In the third round Burman increased his margin over Hilliard by an even minute, and E. A. Hearne, the Chicago amateur, another Buick man, fought his way into third place, a position he kept stubbornly to the end of the race. Jeffers had broken a steering knuckle and was out of it.

Burman was evidently out for a killing, and did not let up a little bit on the 53-mile gait he had laid out for himself. This widened the gap between him and Hilliard, who was driving the Italian car very conservatively a half mile slower to the lap. Hearne clung to third and Cameron worked up to fourth in this, the fourth lap. The air-cooled car's performance was watched with some interest, as it had been backed for \$50 against \$1,500 in the books to coin. The Lancia, by the way,



Burman in Buick, Who Won Second Place.

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# INTERNATIONAL LIGHT CAR RACE AT SAVANNAH, GA., NOVEMBER 25, 1908.

														_			-	-				
Vo.	CAR	Driver	1st	26	. 3d	4th	5th	6th	7th	8th	9th	10th	11th	1-2th	13th	14th	15th	16th	17th	18sk	19th	200
	ANCIA	Hilliard	3	2	-2	2	2	2	2	2	2	1	1	1	1	1	1	- 1	1	1	1	1
	UICK	Burman	1	1 -	. 1	1	1	1	1	- 1	. 1	2	2	2	2	3	3	3	2	2	2	2
0 C	HALMERS-DETROIT	Lorimer	-6	7	5	5	4	4	4	4	4	3	4	3	3	2	2	2	3	3	3	3
1 B	UICK	Hearne	4	5	3	3	3	3	3	3	3	4	3	4	4	4	4	4	4	4	4	4
6 I	SOTTA	Poole	10	10	7	7	6	7	6	5	5	5	5	5	5	5	5	5	5	5	5	5
9 1	AXWELL	See	8	11	8	8	8	6	7	6	6	6	6	6	6	6	6	6	6	6	6	6
7 IV	MAXWELL	Kelsey	10	12	10	10	9	9	9	9	8	8	8	7	7	7	7	7	7	7	7	7
2 1	AXWELL	Costello	13	13	11	11	11	10	10	10	10	10	9	8	8	8	8	8	8	8		
N	MAXWELL	Munweiler	9	4	9	9	7	8	8	8	7	7	7	9	10	9	9	-	-	-		
t B	BUICK	Easter	2	6	12	12	12	11	-11	11	11	11	10	10	0		- 6					
3 0	HALMERS-DETROIT	Bergdoll	7	9	6	6	5	5	5	7	9	9										
	AMERON	Cameron'	11	8	- 4	4	10	-														
	P. O	Connors	12	14	13	13																
6 E	BUICK	Jeffers	5	. 3	3.0																	
3 C	HALMERS-DETROIT	Burns	0																			

was the pronounced betting favorite at three to one against it. From the fifth to the ninth lap, both inclusive, the order was Burman; Hilliard, Lovimer. Cameron first bent his crankshaft in the fifth lap and in the next round for forced to retire altogether, having burned out his clutch.

The tenth round saw a shakeup of the score board. Hilliard during this and the preceding round let out a kink or two of the Lancia's speed. Burman was forced to return to his pit for a missing part, which provokingly could not be found by his assistants. It cost him a loss of some eight minutes, and the race itself, unless the Lancia had even more speed than Hilliard saw fit to exhibit to win. Burman's fatal lap took 19:08 to run. At its end the Buick was 3 min. 51 sec. behind the Lancia. Lorimer and Hearne all this time had been seesawing between third and fourth places.

Another rather bad lap for Burman was his fifteenth. It took him 15:47 to negotiate it. It cost him second place for the time being to Lorimer. In fact, it took three laps of hard riding for Burman to dislodge the Chalmers-Detroit as the runner-up.

In the seventeenth lap Burman regained second place. Hearne had dropped to third place in the twelfth round, and managed to hold it to the end, pursued in order by Poole, See, and Kelsey.

This order—Hilliard, Burman, Lorimer, Hearne, Poole, See, and Kelsey—was maintained to the end. Hilliard beat Burman 6 min. 12 sec., who led Lorimer by 4 min. 10 sec.

In the battle of the tires, the Continental won first, the Michelin second, third, fourth, and fafth, and the Ajax sixth and seventh places. Hilliard won \$500 in cash, offered by the Continental Caoutchouc Company for first. Burman and Lorimer carried off substantial Michelin purses.

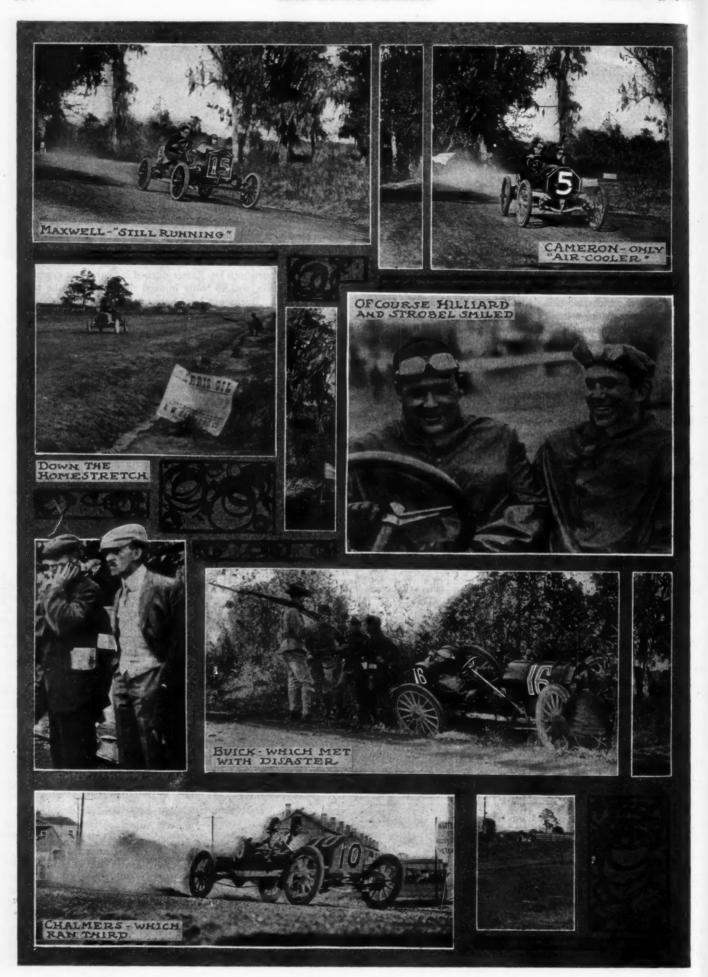
Bergdoll withdrew in the eleventh lap through a broken piston ring. In the fourteenth lap Easter ditched his car. His mechanic, Frank Thompson, was so badly injured that he had to be taken to the hospital. Burns put his Chalmers-Detroit out of the race in the first round through a collision with a tree.

# FASTEST LAPS, LIGHT CAR RACE.

No.	CAR	Driver	Fast- est Lap	Mile: per Hou
10	CHALMERS-DETROP	rLorimer		57.63
8	BUICK	Burman	10:30	55.98
2	LANCIA	. Hilliard	10:42	54.93
11	BUICK.	Hearne	10:54	53.92
5	CAMERON	Cameron	11:01	53.35
12	MAXWELL	0 . 11		53.21
14	BUICK		11:06	52.9
16	BUICK		11:08	52.7
3	CHALMERS	Berødoll		52.50
6	ISOTTA	Poole	11:24	51.5
3 6 15	MAXWELL	Munweiller	12:02	48.0
9	MAXWELL	See	12:19	47.7
17	MAXWELL	70 4	12:44	46.14
1	8. P. O	Connors		31.69
1.3	CHALMERS	Burns		-

# INTERNATIONAL LIGHT CAR RACE OF THE A.C. A. AT SAVANNAH, GA., NOVEMBER 25, 1908.

No.		9.8 Miles	19.6 Miles	29.4 Miles	39.2 Miles	49.0 Miles	58.0 Miles	68.6 Miles	78.4 Miles	88.2 Miles	98.0 Miles	107.8 Miles	117.6 Miles	127.4 Miles	137.2 Miles	147.0 Miles	156.8 Miles	166.6 Miles	176.4 Miles	186.2 Miles	196.0 Miles	niles r hour
	and Driver	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	And
2	LANCIA Hilliard	11:43 11:43	22:25 10:42	34:16 11:51	45:32 11:16	56:55 11:03	68:15 11:20	79:32 11:17		102:14 10:59	113:08 10:51	123:59 10:51	134:50 10:51	145:51 11:58	157:19 11:28					212:40 10:57		
8	BUICK Burman	10:58 10:58	21:52 10:54	32:43 10:51	43:31 10:48						116:59 19:08				164:14 15:47							
10	CH'LM'RS-D. Lorimer	12:04 12:04	24:17 12:13	36:30 12:13	48:24 11:34	60:38 12:14	72:57 12:19	83:09 10:12		107:03 12:18					164:03 11:02					224:44 12:43		50.25
11	BUICK Hearne	11:48 11:48	23:35 11:47	35:20 11:45	47:26 12:06		71:03 11:46								166:39 11:21							
6	ISOTTA	13:26 13:26	26:10 12:44	38:48 12:38	51:10 12:22		77:09 13:16			113:14 12:17		138:06 11:24			176:48 13:58					239:00 12:23		
9	MAXWELL See	13:12 13:12	26:13 13:01	39:02 12:49	51:43 12:41										179:52 13:19			220:26 12:23		245:14 12:19		
17	MAXWELL Kelsey	13:26 13:26	26:38 13:12		52:39 12:58							144:48 13:53			183:17 12:50			221:55 12:57		247:56 13:01		
12	MAXWELL Costello	21:47 21:47	35:06 13:19		68:54 14:25	82:26 13:12									205:06 13:11							at end
15	MAXWELL Munweiler	13:17 13:17	26:22 13:15	39:16 15:54	52:12 12:56	64:14 12:02	77:59 13:45		103:28 12:44		128:23 12:29				235:51 12:43		Still rui	nning at	end of	race.		
14	BUICK Easter	11:06 11:06	23:46 12:40		106:16 11:16	117:38 11:17	128:41 11:08	139:51 11:10	150:57 11:06	162:04 11:07	173:14 11:10	184:32 11:18	195:40 11:08	207:08 11:28	Broke : Estill	rear ax Avenu	le. Ca le; driv	r left ver and	track a	at Wat	ers roa h injur	d and
3	CH'LM'RS-D. Bergdoll	13:08 13:08	25:51 12:43	38:07 12:16	49:08 11:11	62:28 13:20			102:35 14:04	126:42 24:07	140:09 13:27	Withdr	awn; d	lefectiv	e ring 1	oroken	on pist	on spr	ing, an	d a ho	le punc	hed in
5	CAMERON Cameron	14:10 14:10	25:20 11:10		47:28 11:01			rank sh	aft; re	tined cl	utch;	out of	the rac	e.								
1	S. P. O Conners	19:17 19:17	133:04 113:48	222:03 88:59	259:41 37:38	Car run	ning at	end of	race.	Nut go	t in a c	ylinder,	breaki	ng sparl	k plug,	and oil	lead bro	oke.		Sen.	100	
16	BUICK	12:02 12:02	23:10	173:54 150:44	Bent st	eering	knuckle	on Mo	ontgom	ery cros	s road.	Out	of race.									



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# SOME OF THE TROUBLES OF THE LIGHT CARS

THE troubles that beset several of the light cars during the ordeal were those common to larger machines, some of them being entirely due to the cars not being well prepared, while others were the outcomes of carelessness on the part of the drivers. Hilliard, in his Lancia, was entirely free from trouble from start to finish, the only time he lost on the twenty laps being 15 seconds, when he stopped in the fourteenth lap to take on a couple of gallon cans of oil that the mechanician made use of during the remaining laps. Throughout the twenty laps the car ran with commendable regularity, doing all of the laps in 10 and 11 minutes with extra seconds. It was the only car in the race to do every lap but one in less than 12 minutes. Lap after lap as it came down the stretch Hilliard seemed out on a pleasure jaunt, but circumstances proved that he seemed to be getting the maximum speed out of it.

Burman's Buick that landed second honors, had troubles all of its own which apparently could be traced to the use of too light springs in connection with the underslung frame used. On the thirteenth lap both of the rear springs broke, and from that time until the finish of the twentieth the rear end of the car was carried from the axle by two chains and two straps which had been fitted as a precaution before the start of the race. As a result of these breaking, the right rear brake connecting rod snapped and the gasoline tank, a large cylindrical one in the rear, shook loose, shearing off a couple of bolts in the metal straps that held the tank in place. The shearing of these bolts meant going back over a part of the course to the Buick headquarters, where other bolts could be obtained. After once fixed, the gasoline tank gave additional trouble, and once or twice when the car swept past the grandstand the mechanician was holding the tank in place. Still a further outcome of the broken spring was breaking off, due to vibration, the oil lead from the hand oil pump to the crankcase, so that for the last four or five laps the engine oil supply was the splash within the crankcase. Of his twenty laps, seventeen were made in less than II minutes each, a most remarkable performance when it is remembered that the winning Lancia only made eight laps under the 11-minute mark. Burman had three slow laps, the tenth, fourteenth, and fifteenth, in which he lost practically 17 minutes time as compared with his averages for the remaining seventeen laps. During the entire race the bonnet on his car was not lifted.

L. B. Lorimer's Chalmers-Detroit, which won third position, required six laps before it got into proper running condition and during which time four or five stops were made because of the carbureter float sticking, as Lorimer expressed it. In several instances it was necessary to get out of the car and open the bonnet before the trouble could be rectified, whereas at others rapid changing of the throttle worked the desired results. Only once during the contest was gasoline taken on, 5 gallons sufficing, and at this time the oil supply was looked after, both being done by one man, while the other worked on the carbureter. From the grandstand point of view Lorimer's performance was a race against Hearne's Buick, while Burman's Buick and the Lancia were fighting it out. At the end of the seventh lap Lorimer passed the granstand not 100 yards in advance of Hearne, and when they bore in sight at the end of the eighth they were in the exact same position, neither having the advantage of 10 yards over the other in the entire lap. On the ninth lap Hearne passed him, but stopping at the end of this lap for water and oil gave Lorimer a chance to rush past while the fuel replenishment was being made. Hearne stopped again in the seventeenth lap to take on oil and water and also put water on the tires. Hearne made fourteen of the twenty laps in 11 minutes and some seconds, but only in the eleventh lap did he get below the 11-minute mark. All through his driving was most consistent, having but three laps in which 13 minutes and some seconds were needed to do the 9.8 miles. His winning fourth place was a popular achievement because of his amateur standing, whereas many of the drivers he was fighting with were professional factory representatives.

Al. Poole, with the "Baby Isotta," which was given fifth position, made a most consistent running, the car stopping but once in the twenty laps, which was at the end of the fourteenth to take on gasoline and water. Throughout the race the little motor was turning over at close to 2,600 revolutions per minute, and as the Isotta factory rates it at 17 horsepower at 2,000 revolutions per minute, its working power averaged close to 22 horsepower. Every time it came down the stretch it was running with the same regularity and rhythm, and it looked as if it could keep the performance up for an endless time. Sixteen of its laps were made in 12 minutes and some seconds, three of them requiring 13 minutes and some seconds, and one was made in 11 minutes and some seconds, it never getting below the 11-minute mark.

The next four positions went to the four Maxwells, No. 9 driven by Arthur See being first and C. W. Kelsey's No. 17 next, both of which completed the twenty laps. These two were the cars with 5-inch motors of the regular Maxwell 20-horsepower variety. The other two Maxwell Juniors, excepting the cylinders had 4.25-inch bore, did not complete the circuit of twenty laps, but were running at the finish, No. 12, driven by Thomas Costello, having finished nineteen laps, and No. 15, piloted by Joseph Muntweiler, having finished fifteen laps. As was expected before the start, all of the Maxwells kept running, and while their speed was not equal to that of their four-cylinder opponents, they set an excellent example in the rôle of consistent working. Muntweiler's No. 15 had trouble in the twelfth lap when speeding along Water's road, the left front wheel came off letting the steering pivot drop onto the hard road. Muntweiler avoided an accident by noticing the wheel wobbling and applying the brakes. The trouble was due apparently, according to the driver, to leaving the cotter pin, which holds the nut on the pivot, out. As it was, the wheel did not stop rolling until in an adjoining field. Muntweiler pluckily set to work and got it on again, but had trouble with the nut because of the threads on the spindle being ruined when it fell on the road. After the first repair it ran for I 1-2 miles, when the wheel again came off, this time unexpectedly and when traveling fast, with the result that when the axle fell it formed a pivot on the road turning the car completely around. After a second repair the car was able to reach the repair pit at the grandstand, where a new steering pivot was secured. This delay caused 40:38 and 41:46 to be the time for the two successive laps, but in spite of this the little car kept going and was running when the race was called off. Costello, with the other little Maxwell, had a puncture in the third lap, the only one of the four Maxwells to have any trouble with the Ajax tires. In spite of this he made the lap in 19:23, but stopped at the grandstand and took on a new tire; this stop being just at the start of the fourth lap made his time in this lap 1 minute longer than the average of the remaining sixteen laps he negotiated. Kelsey, in No. 17, had no troubles of any nature and made one stop, in the tenth lap, to take on gasoline. Kelsey's performance was consistency personified in that he did thirteen of the laps in 12 minutes and some seconds, and the remaining seven laps in 13 minutes and some seconds, there being but 1 minute and 9 seconds difference between his fastest and slowest lap in the entire twenty circuits. Arthur See, driving the No. 9 Maxwell, however, beat Kelsey 2 minutes 6 seconds in the twenty laps, but did not do such consistent work, requiring 14 minutes and some seconds for three of the laps and setting a low-water mark of 12:15 for one lap as against Kelsey's low figure of 12:44. Compared with these times, however, Muntweiler, with the little Maxwell, made considerably faster time, doing five laps below the 12:55 mark set by Kelsey and setting a record lap figure for the Maxwells of 12:02, or approximately 49 miles per hour for the 9.8 miles. See's car stopped in lap 15 to take on oil and



Hilliard's Lancia Making Its Speed Evident by Passing Easter's Buick Rounding One of the Turns.

adjust the steering gear and in lap 19 he stopped for gasoline. H. Connors, in the S. P. O., which was running at the finish, but had just completed the fourth lap, was in hard luck from the start. The car had been rebuilt from a different model touring car after its accident of the previous Saturday, and Connors and his assistants had worked night and day upon it. The back wheels had a wider tread than the front ones, and several other glaring irregularities were noticeable because of the impossibility of getting duplicate parts to do the rebuilding with. The first lap was made in 19 minutes and some seconds, but in the second trouble with the engine developed.

Of the six cars that were not running at the finish, the first to drop out was unlucky No. 13, Chalmers-Detroit, driven by W. R. Burns, which just covered 4 miles of the required 196 miles and was the only machine not to make a complete lap. On the second bank turn, on the White Bluff road, the car's front wheels, provided with plain tread tires, failed to hold the turn and skidded over it, and the car collided with a tree throwing the mechanician out, and Driver Burns, remaining in his seat, was rewarded for his heroic efforts by losing four of his front upper teeth and injuring the roof of his mouth by striking upon the steering wheel. The accident was not due to taking the turn too wide, but too fast for the plain-tread tires. The heavy fog of the early morning was equivalent to a rain, and in connection with the oil made a slippery surface.

Not an hour later another car came to grief on this same turn, Earl Jeffers in No. 16 Buick being the victim. Jeffers, like Burns, was traveling fast and made the turn well, but just when straightening up on the Montgomery road the left steering knuckle arm broke, the wheel wobbled for a while, and then the car headed for the left side of the road.

The little four-cylinder Cameron air-cooled car, with its 32-inch wire wheels, was the next car to drop out, which it did after reaching the grandstand on the fifth lap, when it pulled into the open space at the end of the pits and remained until the end of the race. Its trouble was due to burning out of the clutch. This little car made a most auspicious start, and while its first lap was a little slow, the next three were made in 11:10, 11:07, and 11:01, and everybody began to look for a duplication of its performance in the Sweepstakes, but were rudely disappointed a lap later when it withdrew. Although this car was very light, it held the course beautifully, and made the fastest getaway at the start of the race.

L. J. Bergdoll's No. 3 Chalmers-Detroit followed the Cameron withdrawal at the end of lap 11. This car was handicapped in that the car did not reach Savannah until Tuesday, the day before the race, and the 3.75-inch cylinders arrived a couple of days earlier. The regular 3.875-inch cylinders had to be removed, being too large for the race, and the smaller ones placed on. They were new and had to be worked in, and there was no time for this. As a result, the motor heated during the run, which caused a loss of time. Bergdoll also used bevel-seated valves, and it was with one of these that the trouble arose which put him out of the running. The valves are located in the cylinder heads and shearing the pin in one of the stems against which the washer for the valve-spring seating rested, allowed the valve to fall into the

cylinder, and the piston was broken, putting the car out of racing commission. It was withdrawn and stood in the space at the end of the repair pits until the race was over. The car stopped at the end of lap 9 and withdrew at the end of lap 11.

The last car to drop out was No. 14 Buick, driven by Hugh Easter, which broke its rear axle when making the banked turn off Water's road onto the homestretch, which resulted in ditching the car over the outside of the banked turn and severely injuring Mechanician Thompson.

The rules allowed of using a four-cylinder motor with 3.75-inch bore and any stroke, and the three Chalmers-Detroits and four Buicks availed themselves of this measurement; the winning Lancia had a bore of 3.5 inches, the S. P. O. 3.75, the Cameron this limit also, and the Baby Isotta 2.43, being the baby of the lot. The mosquito fleet of four Maxwells comprised the only two-cylinder contestants, all of them having the conventional Maxwell motor with the two opposed cylinders mounted crosswise in front of the dash and in two sizes, Nos. 12 and 15, having 4.25-inch bore, and Nos. 9 and 17 with 5-inch bore, which was the maximum permitted in a two-cylinder machine.

Of the four-cylinder machines four, the three Chalmers-Detroits and the Isotta, used cylinders formed in one casting, the Isotta having the intake and exhaust valves in the cylinder heads with one rocker arm for each valve and an overhead camshaft which, with the rocker arms and valve cages, entirely enclosed by an aluminum cap, which forms an oil-tight compartment within which a splash occasioned by the rocker arms is maintained for the cams and rocker arm parts. The Lancia, Buicks, and S. P. O. have cylinders cast in pairs, the Buicks with valves in the heads, and the other two with valves in the bottoms of chambers on one side of the cylinders. Remy magnetos were on the Cameron and Nos. 8 and 16 Buicks, the two latter with underslung frames, and on all of the other contestants were Bosch high-tension magnetos with a spare battery system carried on the majority of them. All of the Buicks were fitted with Schebler carbureters, the Chalmers-Detroits with Kingstons, the Cameron with a Breeze, the Maxwells with the stock Maxwell carbureter, and the Isotta, Lancia and S. P. O. with types of their own make. There was a strong tendency shown toward three-quarter elliptic springs in the rear, five of the cars, the three Chalmers, S. P. O. and Lancia, being so fitted; the two 4.25-inch Maxwells used elliptic springs all around and the two 5-inch ones semi-elliptics; the two Buicks, with frames carried above the axles, used elliptics in the rear, and the two with underslung frames used a style of inverted semielliptics which resembled two very short inverted semi-elliptics placed end to end with a short uniting straight piece between them and which served for attaching to the axles through the usual clips. The springs on the majority of the cars were well wrapped with tape and shock absorbers. Hartfords were fitted all around on the three foreign machines, Lancia, Isotta and S. P. O., whereas not an American car fitted an absorber of any nature other than rubber bumpers and leather rebound straps.

Nine of the fifteen cars carried Michelin tires; the four Maxwells carried Ajaxes; the S. P. O. was fitted with Pennsylvanias, and the Lancia with Continentals.

(Story of the Grand Prize continued on Page 795.)

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# BENEFITS DERIVED BY HEAT TREATING STEEL\*

BY THOMAS I. FAY. PRESIDENT SOCIETY OF AUTOMOBILE ENGINEERS

ETALLIC salts are superior to metals for heat baths in M heat-treating work because higher temperatures are possible on one hand, and lower initial temperatures are possible on the able to raise the temperature of the parts slowly, from a low temperature to the ultimate temperature. This would not be possible in a metallic bath because the heat of the bath cannot he less than the temperature of the melting point of the metal. The use of metals with a low melting point would not serve the purpose because with metals it is not feasible to keep on increasing the temperature to any extent.

Metallic salts on the other hand can be controlled within very wide limits, as for illustration, if it is desired to attain a maximum temperature of 1,000° C. from a very low initial temperature, it is only necessary to provide the metallic salts as follows:

# 1,000° C. METALLIC SALTS HEAT BATH.

(NaOH)	Sodium H	ydrate	8%
(NaCI)	Sodium Ch	lloride	91%
(KNO)	Potassium	Nitrate	0.5%
$(K_2CrO_4)$			

Up to 1,000° C. this bath will not vaporize, hence it is available for use in heat-treating work for the purpose of heating steel previous to quenching, for any temperature up to the maximum, as stated. If, on the other hand, a higher temperature than 1,000° C. is desired, then it is necessary to use:

# Pure Crystalline Chloride of Barium.

The melting point of this material is about 950° C., hence in using it the materials must first be heated in a bath of such metallic salts as will melt at a lower temperature, if it is a fact that suddenly heating the steel at such a high point will affect the results adversely. The chloride of barium salts will allow of a temperature of 1,350° C.

If chloride of barium and chloride of potassium are mixed in the ratio of 3:2 the result will be a metallic salt bath that will give good results up to 950° C., with a melting point 670° C., but as before stated, if the melting point is to be lower, the 1,000° C. bath is the proper one to use. By varying the proportions of the salts it is possible to fix a variety of temperatures both initial and final. The advantages of the salt bath are obvious, since the immersed steel takes on the temperature of the bath and the steel is protected from contact with all else besides.

It has been found that the salts do not affect the steel in any way and in transferring the steel from the salt bath to the quenching bath the steel is protected from atmospheric contact, so that the steel remains clean and free from surface oxidation. This question has received much attention at the hands of Dr. Geo. W. Sargent, Metallurgist in Chief of the Carpenter Steel Co. in America, and while the salts gave trouble in a steel wire process by clinging to the wire (thus clogging the dies), it was not the claim of Dr. Sargent, in his discussion of the matter, that the salts imparted any bad qualities to the materials of which the wire was composed.

# Methods of Using Metallic Salts.

In Germany, the method of heat treating with metallic salt baths, has been advanced to a high state of perfection, and it is believed there is no question of deterioriation of the steel, as a result of contact with the salts. The author is indebted to Dr. Sargent for much valuable information on the subject, and it is believed it was to him the introduction of said method of heating (in America) must be accredited.

NOTE.—The investigation of the metallic salts for this purpose was conducted in Germany by Mr. Joseph Schaeffers, M.E., Mem. S.A.E. and A.G.T. (Ger.) in 1906-7, for the author.

The equipment may be regarded in substance as an electric heater. The heater itself consists essentially of an iron container of suitable size, lined with asbestos brick faced with fire other. It is one of the objects in heat-treatment work, to be clay. The cavity within is then filled with the salts and the electrodes are so placed as to require the electrical current to traverse the salts to form a connection, in other words the circuit is completed by the salts between the electrodes. A pyrometer inserted in the molten salt bath shows the temperature of the bath and the steel immersed in the bath will take on the temperature of the same.

> The electrodes are of iron (flat plates). The iron of the lowest carbon (soft Swedish iron) best serves the purpose. The electrical current is alternating about 50 periods, at about 190 volts electromotive force. It is at first necessary to melt the salts before the hardening process can be started and a path for the current (of lower resistance) must at first be provided. As soon as a molten streak is formed in the salts the process then proceeds without further difficulty.

> "Atoms of chlorine and barium are set free at both electrodes, the chlorine combines with iron to form chloride of iron while the barium and free iron." The iron being heavier than the liquid salts, falls to the bottom of the heater, from whence the excesses may be removed at will, while the salts are molten. The iron is simply scooped out of the molten bath.

> The heat regulation is very simple, since by raising or lowering the voltage of the electrical current the current strength will fluctuate accordingly. The electrical energy is accordingly changed to suit the occasion in the manner as follows:

 $W = E I = r^3 Z = E^3 / Z =$  Energy in watts.

In which:

I = The square root of mean square current in amperes.

E = The square root of mean square electromotive force in volts.

Z = The impedance of the circuit (salts) between the electrodes. It will not be necessary to go into the question here of the phenomena of the alternating current circuit in metallic salts bath, because the problem from the point of view of the heat treatment of steel does not demand exact knowledge of the details of the alternating circuit.

That the impedance Z will change with the temperature is true, but the means for varying the voltage being at hand and adequate for the purpose renders it unnecessary to investigate this phase of the subject.

With the increasing impedance it will be necessary to increase the electromotive force at a somewhat higher rate, because with the increasing temperature, the heat losses will be more. The current strength should slightly increase then, and this will be at the expense of increasing voltage.

The heat equivalent of the electrical energy will be as follows:  $H = I^2 Z t$  0.24 = small calories.

In which:

## t = time in seconds;I and Z as before.

With means for ascertaining the heat equivalent of the electrical energy, it is just as feasible to use the electrical current for the purpose as it would be to use any other source of heat. The electrical means of heating is the more convenient, because the heat is delivered to every molocule of the salts with great uniformity and the conditions are perfectly satisfied.

The cost of the electrical energy is not high, in comparison with the service rendered. For a heater 6.25 x 6.25 x 7 inches the electrical energy consumption was reported as follows:

Tempe	eratu	re.						E	nergy	in	kilowatts
880 deg	gress	C	 	 	 	 	 	 	5-4	рег	hour
1,400 deg	grees	C	 	 	 	 		 	8.5	per	hour
1,300 des	grees	C	 	 	 	 		 	12.25	per	hour

<sup>\*</sup>Continued from page 741, "The Automobile," issue of Nov. 26.

Besides the cost of the electrical energy, there is the replacement of the iron electrodes, which is but a small item; then there is the replacement of the salts as they are volatilized. This is not a large item, since the replacement will not exceed two pounds of barium salts per hour.

The inside of a heater, if it is a crucible, which would be very satisfactory (a clay pot) for the purpose, would last for an indefinitely long time, because, even if it were to split, the salts would seal the opening again and there is no other wear. The amount of hardening that can be done with an outfit of this sort will be very considerable, since the control is rapid and accurate. The pieces to be treated would quickly raise to the desired temperature in the bath, and to repeat the process would be a very simple thing to do.

# Correct Temperature Observations.

Any suitable pyrometer will serve to take temperatures. That the galvanometer used for noting the strength of the current should be "dead beat" and accurate goes without saying. Such outfits as the Le Chatalier pyrometer would serve admirably the purpose, with the proviso that a master galvanometer be available for use in checking the working instruments. This would be true with any system, moreover; the check instrument should be available even in small plants.

The check galvanometer should be sent to a testing laboratory at regular intervals to be calibrated, and it should be mounted in a suitable place during the period of its service. There are various types of galvanometers among which the D'Arsonval, all of which can be provided with a scale to read temperature degrees instead of angular deflections or milli-amperes as the case may be. If the means for heating are to be quick and accurate, surely the provision should be something besides a tub of dirty water. The several quenching baths are as follows, named in the order of merit:

- (I) mercury;
- (II) acidulated water (ice cold);
- (III) salt water (ice cold);
- (IV) salt water (normal);
- (V) water;
- (VI) water and skim milk;
- (VII) lime water;
- (VIII) fish oil;
- (IX) cod-liver oil;
- (X) cotton-seed oil.

The mercury may not be used excepting for very small parts in view of the poisonous vapors it emits. The water quenches are more to make parts very hard, while the oils render parts tough and less hard. Double quenching is sometimes resorted to, the idea being to attain toughness and considerable hardness besides.

For quick work it is desirable to provide a means of maintaining the quenching baths at a constant temperature. There are diverse ways of accomplishing this feat, among which a pump to circulate the liquid and a cooler with a fan to abstract the heat from the same. The usual methods of cooling automobile motors would serve perfectly well.

There are various other ways of fitting up to accomplish the several ends. On the whole the idea has been to advocate even indirect heating, rather than to allow the parts to contact with the fire direct or for that matter with the heated products of combustion as in a muffle furnace. The muffle furnace is good, but the molten bath is better. The order of merit of the several methods then would seem to be as follows:

- (I) molten salt bath (electric heater);
- (II) muffle furnace (gas heater, or, oil);
- (III) open forge (charcoal fire);
- (IV) bunsen burner (direct flame).

The forge is better than the Bunsen burner because in the forge it is possible to cover the parts and to so urge the fire as to bring the parts up to the desired temperature slowly and more evenly than with the Bunsen burner. Both methods are very defective from the point of view of the best results.

The quenching equipment should serve for the purpose, no matter what may be the means of heating. The annealing methods on the other hand can be varied, to suit the occasion and the materials. A bed of lime does very well; ashes serve for some purposes; allowing the parts to cool in a muffled furnace is still another way.

Tempering at temperatures below 350° C. may well be done in oil. The parts may be placed in oil and the same can be gradually raised to the desired temperature; there to be held for the requisite period depending upon the mass and quality of the material. If higher temperatures are demanded, the parts can be transferred to the molten salt bath; there to be raised to the desired temperature.

Tempering is a matter not always fully understood. The mere raising the temperature to some predetermined point is not likely to be productive of the anticipated results. If a part is very thin, of no great mass, it is possible to temper (draw the temper) by virtue of the mere application of the heat requisite to raise the temperature of the mass to the predetermined point. If, on the other hand, the mass is considerable and the section is more or less the same in all planes, a time factor must be introduced.

The time required to temper a piece depends upon the mass and upon the state in which the piece happens to be. It is equally a fact that some grades of steel will be more persistent than others. Nature hard steel (steel that habitually resides in the hard state) will not so readily consort with softness, as the products of the character "normally soft" and difficult to render hard.

For tempering, the lead bath is sometimes used, or lead antimony may be employed. It is even possible to use alloys of the white metals to afford temperatures differing by quite small increments. In all such cases it is plain to be seen that to some extent, at any rate, the metal will adhere to the parts to be treated; thus becoming a nuisance.

### MELTING POINT OF ALLOYS.

Lead.	Tin.	Bismuth.	Degrees Fahrenheit.	Degrees Centigrade.
1	1	I	250	121.1
2	2	2	292	144.4
3	3	I	310	154.4
4	4	1	320	160.0
6	1	0	381	193.8
1	. 2	0	441	227.2
I	3	0	482	250.0
1	5	0	511	266.I
I	10	0	541	282.7

These metal baths should be covered with charcoal powder else they will oxidize away very rapidly indeed. The exactness of the temperature depends upon the purity of the metal and the exactness of the proportions. The temperature will remain constant just so long as some of the metal is melting; temperature will raise after all is liquid, if heat is urged.

The melting point of the pure metals unalloyed would be as follows:

Lead618	degrees	F. = 325.5	degrees	C.
Tin446	degrees	F. = 230.0	degrees	C.
Rismuth 507	degrees	F - 262 2	degrees	C

Zinc would serve for a somewhat higher temperature if it could be used at all, but it would cling to the metal to be tempered with great tenacity. Lead alone affords a good means for tempering parts to be tough but not file hard. Bismuth would, if used, result in considerable hardness of the quenched parts, in view of its comparatively low melting point. If the temperature of the molten metal is allowed to increase, after the metal is all dissolved, the poisonous vapors given off will be very detrimental to the health of the artificer, and it is a question if it is humane to allow work to be done regularly in this way.

At all events men who work around lead baths should be very careful not to inhale the fumes. The arrangement of the bath should be such as to have the fumes sucked up a "flue" by a fair unde wou pera TEN

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suitable fan of good design. It is quite general to attempt to judge temperatures by color, but, as it is quite well appreciated by mostly every one connected with the art, to judge correctly is a difficult, if not an impossible, undertaking. The susceptibility of the "retina" of the eye of the observer to light, would be a fair constant in a place of "constant illumination," or in the dark under well defined conditions, yet even so no two observers would reach the same conclusion. The generally accepted temperatures in relation to color may be set down as follows:

### TEMPERATURES CORRESPONDING TO COLOR. (M. Poullett.)

High temperatures.	Degrees.
Incipient red heat	977 F. = 525 C.
Dull red heat	1,292 F. = 700 C.
Incipient cherry red	1,472 F. = 800 C.
Cherry red	1,652 F. = 900 C.
Clear cherry red	1,832 F. = 1,000 C.
Deep orange	2,022  F. = 1,105  C.
Clear orange	2,192 F. = 1,200 C.
White heat	2,372 F. = 1,300 C.
Bright white	2,252 F. = 1,400 C.
Dazzling white (maximum)	2,912 F. = 1,600 C.
Dazzling white (minimum)	2,732 F. = 1,500 C.

The melting point of steel depends upon the composition, as for illustration: The carbon has a marked effect upon the melting point. For each point of carbon in the steel the melting point is lowered one degree centigrade. On this account it is not possible to fix a definite temperature for the white heat bordering upon the melting point of the steel. The colors above set down are for products showing color due to high temperatures. Steel in the comparatively cold state will also show color consistent with its temper, and in tempering steel it is common practice to go by that color. It would be better, of course, to temper to a definite temperature by the pyrometer. The usual values accepted for the temper corresponding to color in comparatively cold steel may be set down as follows:

## TEMPER COLORS.

										1	Low	temperature	es.
												Degrees.	
Deep orange	 			 							421	F = 216.1	C.
Orange													
Red	 										509	F = 265	C.
Violet	 						0	0,			531	F = 277	C.
Indigo	 	0						۵			550	F. = 288	C.
Blue	 										559	$F_{.} = 293$	C.
Green	 	0									630	F. = 332	C.
Oxide gray .	 	9		3 6		0					752	F. = 400	C.

The temperature in degrees C. is given in round numbers for convenience; the error is but slight. In noting the temper color is it necessary to polish a spot on the steel? Different observers will reach different conclusions. A fair conclusion is but the result of experience. Temper colors will not develop excepting in the presence of air; moreover, the parts have to be bright to show the colors clearly. The colors do not develop always at the same temperature, because the steel is not always of the same composition. If the color shows readily in a given specimen of steel it will be a fair inference that the steel quenches to great hardness

In some grades of steel the color will rub off readily. This will be in cases involving steel that does not quench to great hardness. The best temperature of quenching is the temperature that affords the requisite hardness. The lowest possible temperature should be taken in every case, allowing, of course, for the desired hardness. In tempering the reverse is generally true. The temper should be drawn at the highest temperature that will enable the steel to be used for the given purpose. In drawing the temper the mass of the pieces to be tempered must be taken into account. They must be left in the bath long enough to make sure that the steel is up to the temperature of the bath itself. Fixed instructions as to the time are not possible, because of the considerable differences in conditions.

For tempering, the bismuth bath affords the right temperature for a considerable variety of articles, as taps, dies, numerous tools of carbon, steel, and springs for some purposes. Certain animal oils serve the purpose also. In using the oil bath it is necessary to exclude the air or the oil will take fire. Burns from oil are particularly painful and even dangerous.

It might be well here to define what is meant by tempering. If by quenching we mean hardening, then by tempering we mean "drawing the temper," or, as they say, "letting down." On the other hand, it is not uncommon to say tempering is hardening (result of quenching), whence drawing the temper is the converse. The author argues that "temper" is a final condition, hence drawing the temper is in the act of tempering. Quenching, then, is not tempering, unless the parts are to remain as quenched. They never are left as quenched in practice, and it is not uncommon to say, "quenching and tempering," that is to say, "hardening and tempering," or hardening and subsequently annealing would amount to the same thing.

It is not the purpose of the author to struggle with the vagaries of the language used by mechanics more than to attempt clearness sufficient to render the meaning apparent and to avoid license, excepting when that same license will serve a useful end.

(To be continued.)

# THE GENERAL ASPECTS OF AUTOGENOUS WELDING

THIS process of joining metals seems to offer a solution to many difficult problems, and in some respects is more favorably regarded than the better known electric welding process. The limit of application is a matter that will have to be settled in the future as the product of experience, and for the present it will suffice to confine discussion to the elimination of fallacies, as, for illustration, it is said that aluminum cannot be welded by the autogenous method, whereas the contrary is true. The autogeneous process consists essentially of uniting metals by intervening a molten mass of substantially the same material. The high heat (6300 degrees Fahrenheit) is so intense that the melting phenomenon is localized. To more clearly illustrate the process attention will be called to the old method by which lead is burned together through the good office of a hydrogen flame, in which the needle-like flame is directed against the faces to be joined and the metal on the faces melts, bridges across, and the whole operation is performed so quickly that the joint is made before much heat is imparted to the mass as a whole, hence the shape as a whole is not destroyed. Aluminum is a peculiar product with a comparatively low melting point, and the needle-

like flame of the high temperature, as above set down, must be directed in obedience to the tactic movements of a person of some skill. Cast-iron offers no such difficulties, because its melting point is considerably higher and the autogenous process is especially efficient in connection with cast iron, particularly if we take into account its non-ductile character. With whatever metals to be welded, it is a fact that thickness more or less defeats the operation. If the parts to be welded are quite thick, the edges will have to be backed off in order that the flame can actually contact with the mid-section surfaces, since it is true of autogenous process that the flame must contact with every particle of metal that is required to flow. The indirect application of heat, if the autogenous process is considered, would result in the flow of the metal that contacts with the flame and would destroy the shape of the parts without actually producing a weld, since the metal in the weld flame would receive its heat by conduction, which would not be enough to cause the metal to flow. The high temperature of the autogenous process is, therefore, efficient in proportion to the skill of the operator, and inefficiency will run rampant in the absence of skill.

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# VALUE OF NITROGEN IN THE MIXTURE

T HAS been pointed out that nitrogen is present in the "mixture" in gasoline motors to a very considerable extent, and, too, that the nitrogen is inert, hence of no fuel value. The same authorities reach the conclusion that the absence of direct fuel value in the nitrogen is conclusive proof that the nitrogen is detrimental, in diverse ways, as fostering an obnoxious smell, decreasing thermal efficiency, and augmenting ignition troubles.

This is equal to saying a telegraph poll is of no value because it does not directly transmit the electrical impulses, and it does attract lighting, which is somewhat discommoding in various ways. Remove nitrogen from the mixture and the same will take on the degrees of an explosive. There is a distinction to be drawn as between an explosive and a quick burning mixture, in which the rate of flame propagation is with a time factor that bears a manageable relation to the moving mass. This time factor is quite as necessary as the gasoline. The fuel value is desirable, but the means of its use cannot well be done away with, if good results are to follow. It is easy enough to so increase the rate of flame propagation, as to have the energy break out through the cylinder walls instead of as a desirable manifestation.

# The Minimum Sufficient Amount of Air Required.

It is generally considered that the minimum sufficient amount of air required with one pound of gasoline will be slightly more than 15 pounds, in which some 12 pounds of nitrogen will be found. It is conceded, however, that this rich mixture is not so very valuable because the motor heats up and the combustion is incomplete. Increasing the air content improves the mixture and raises the thermodynamic efficiency. On the other hand, this same increase in the quantity of air increases the quantity of nitrogen. Is it not strange that the results should be better if nitrogen is a detriment?

The products of combustion will be not less than,

$$CO_2 = 2$$
 pounds  
 $N = 11.8$  pounds  
 $H_2O = 1.5$  pounds of air.

The water and the carbon dioxide are products of fuel combustion, while the uitrogen, in itself, of no fuel value, absorbs heat on the peak of the heat wave and "fattens" the curve by giving up the excess heat. It does more by way of affording a measure of time to the flame propagation. The nitrogen then stands to the fuel, just as springs are to the chassis, or better yet, it is a "shock absorber." Without nitrogen the flame propagation would be on the basis of a detonator and the shock would be felt since the mechanism would not be free to absorb the

Whenever anyone wants to know positively as to the value of nitrogen in the mixture, they can readily have the negative answer by trying nitro-glycerine instead. Concentrated fuel is another name for a detonator, and it positively is not what is wanted in automobile work. The piston must either recede ere the pressure builds up or the cylinder walls will protest. The piston does recede, with the mixtures diluted with nitrogen, fast enough to so influence the wave of pressure as to keep the same at a safe maximum.

### Mixtures of Atmospheric Air and Hydrocarbons.

The present mixtures of atmospheric air and hydrocarbons then has many advantages, among which safety is capitalized. The oxygen abstracted from the air is free to all and the nitrogen (shock absorber) is equally inexpensive.

When carbureters are properly adjusted and the tuel is nicely balanced the relation between the point of self-ignition and maximum pressure is about all that cast iron cylinders can be expected to stand. It is the nitrogen that makes it possible even as it is. If, on the other hand, the results are not all that cast iron can stand, it is the carbureter that is crying for attention

and not a case of "too much Johnson" (nitrogen) as some are wont to claim.

Comparing gasoline with alcohol it has been pointed out that the nitrogen is in less presence, and the alcoholic mixtures are claimed to be superior because of this fact. Let us scan the scenery a bit, and see what the purturbances really are. It is the fuel that must be paid for by "coin of the realm," hence any comparison must be made on a basis of the fuel. It will be all right, for the present, to disregard the pound price, on the ground that alcohol has no market; nor will it have, until the relative values are equalized. Taking one pound of alcohol and the same amount of gasoline, it is to find that the fuel value for each may be measured in pounds of CO<sub>2</sub> and H<sub>2</sub>O in the products of combustion, under equal conditions of service. These values may be set down as follows:

One pound of fuel and minimum necessary air.

Alcohol. Gasoline. 
$$CO_2 = 1.9$$
  $CO_2 = 3$   $H_2O = 1.2$   $H_2O = 1.5$   $Total = 3.1$   $Total = 4.5$   $\frac{3.1}{4.5} = .688$ 

In other words, the products of fuel combustion will be 68 per cent. of what will obtain with gasoline, for alcohol, per pound of liquid fuel used.

# Gasoline Is More Effective than Alcohol.

The volume of products considering gasoline will be more, and more nitrogen will be present in consequence, since the weight of liquid fuel is the same for both fuels considered. But, if there is more nitrogen with gasoline there is also more energy in the fuel to spend upon the nitrogen, and the result is not the disadvantage case might be led to understand. In gasoline, the ratio of potential products to inert products is as follows:

$$\frac{15.3}{4.5} = 3.4$$

while with alcohol the ratio, on the same basis, is

$$\frac{9}{3.1} = 2.9$$

In other words, there is 3.4 times as much inert gas in the gasoline as there is potential products, while in alcohol the value shrinks to 2.9. As a result of this exposé, it is to predict that the rate of flame propagation will be faster, somewhat, for a location in the following that an advantage will be directly due to this fact, since it is true that efficiency is dependent, not only upon the heat energy in the fuel, but the ability of the mechanism to utilize that energy efficiently. There is much energy in a cyclone, but windmills do not seem to cope with it, efficiently. The same idea dominates the motor and the fuel.

# Incomplete Scavanging Has the Same Effect as Nitrogen.

There is such a thing as going too far in the direction of retarding the rate of flame propagation, and spent products of combustion are likely to be the cause. On the other hand, if a motor is not well scavanged, this fact does not constitute a good reason for claiming that nitrogen is as a detriment. Certainly a motor must be well scavanged if it is to do good work, and the more completely the process is, the more will be the nitrogen requirement. In the advance of the industry it may be that concentrated fuel will be available. This will be when materials of construction will allow of higher pressures, and when the cost of such fuel will be low enough to compete with gasoline. The turbine, and oxygen from some cheap source of supply, to mix with the fuel, will be something to take notice of.

# LETTERS INTERESTING AND INSTRUCTIVE

# SOME LOSSES IN TRANSMISSION DISCUSSED.

Editor THE AUTOMOBILE:

[1,654.]—In connection with an electrical vehical I am overhauling, I want to reduce the electrical losses as much as possible, and would be glad to have you favor me with a formula, such as would serve to fix upon the right sizes of wires for the work. The normal rate of discharge is 20 amperes of current at 80 volts, E. M. F.

There are two considerations, i.e., (a) the wire must be big enough to abort undue heating, no matter what the "drop" in volts may be; (b) after determining the "drop" in volts by the formula here given, find out if the wire (conductors) will overheat; if so, reduce the "drop" in volts still further by making the size of wire of that area in circular mills, which will conduct the current in amperes without overheating. Formula:

$$m^2 = \frac{F 4}{V} \frac{21.21}{V} = FAY = \text{area of conductor in circular mills}$$
(copper);

$$F = \frac{m^2 \text{ V}}{F \text{ 21.21}} = \frac{m^2}{A \text{ Y}} = \text{the distance in feet (one way) from this source of supply to the delivery, counting the resistance of both the + and - leads;}$$

$$A = \frac{m^2 V}{F \cdot 21.21} = \frac{m^2}{F \cdot Y} = \text{current in amperes};$$

$$Y = \frac{2I.2I}{V} = a$$
 constant for copper;

$$V = \frac{F A 2I.2I}{m^2}$$
 = the "drop" in volts.

A circular mill is equal to the square of a mill; one mill is equal to 1/1000 inch. Hence, the diameter in mills squared equals the area in circular mills. The heat question is a matter involving some uncertainty in view of the fact that the "emisivity" is dependent upon numerous considerations as, the diameter over the insulation; the degree of exposure to air currents; the color of the surface of the wire, and the insulation, etc. In general it is to say the energy in watts dissipated will be as follows:

$$W = \frac{I}{223} \times \text{degrees } F \times s = \text{energy in watts dissipated};$$

whence .

$$I = \sqrt{\frac{W}{R}} =$$
the current in amperes;

and:

$$R = \frac{10.3 \times L}{m^2}$$
 = the resistance in ohms, of the wire, per foot of length.

The allowable increase in temperature in degrees Fahrenheit may be fixed as 60 deg. Fahrenheit, and the emissivity may be taken (in work of this sort) as equal to that which satisfies the formula for "W". The surface in square inches can be taken as the surface over the insulation. In the formulæ,  $s = \sup_{x \in \mathbb{R}^n} \sup_{x \in \mathbb{R}^n}$ 

# FIAT "CYCLONE" AND CHADWICK BRIARCLIFF.

Editor THE AUTOMOBILE:

[1,655.]—Was the Chadwick entry in the Vanderbilt Cup race a stock car? Was the Chadwick recently tried out at Bristol a stock car? What is the size and type of engine used in the Fiat Cyclone? St. Paul, Minn.

L. O. G.

The Chadwick cars were regarded as stock models. The Fiat Cyclone is 140x130 millimeters, bore and stroke respectively, valves on the top of the cylinders.

# FACILITIES FOR A RESERVE GASOLINE SUPPLY.

Editor THE AUTOMOBILE:

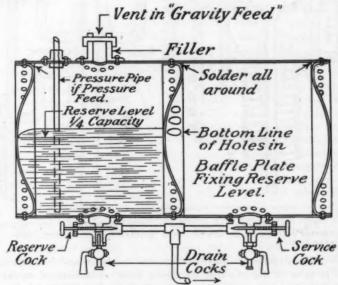
[1,656.]—I may be "an absent minded beggar," but the fact remains that I have, on more than one occasion, found myself without gasoline, at a distance from any possible source of replenishing the same. I dislike auxiliary tanks. How can I fix up a good scheme?

P. A. B.

New York City.

One way that might commend itself to you is here illustrated. The shell is of "20-ounce cornice copper." The heads, of 16-ounce, same material. The haffle plate is in the middle (of the same material as the heads), with holes to let the gasoline through above the horizontal center line.

This tank will hold in reserve one-quarter of the total capacity, which will be rendered at once available by opening the reserve cock. The service cock can be left open while the reserve is being used or it may be closed. In filling the tank, the filler is on the reserve side, so that the overflow goes to the service account.



Divided Gasoline Tank, Showing Reserve Supply.

If the gasoline is fed with pressure it must be observed that the pressure pipe is attached to the reserve side in order that the flame (if there is any) will be quenched in liquid fuel when the reserve fuel is all there is in the tank. It is assumed that the "pressure" will be led from the exhaust.

The "cocks" do not have to be in the "well" castings; they can be in the "make-up." The tank can be round, oval or any desired shape, suiting the space available in the car.

# SOME TOURING CAR TIMING TROUBLE.

Editor THE AUTOMOBILE:

[1,657.]—I have a 1908 Reo touring car, Model A, and would like some information on timing the spark. My car has double-opposed engines, and the instructions say that the spark should fire on each cylinder at the same position on the flywheel. Now, I cannot get it to do this. The explosion will take place at the right place on one cylinder and on the other four inches late. Now, if you can give me the remedy, I will be greatly obliged.

I wish to ask you the cause of my exhaust pipes heating as they do. On coming home at night after a 14-mile run my exhaust and muffler will be red hot.

H. B. ROBSON.

The information afforded you in relation to the accuracy of timing, is beyond criticism. If you cannot locate the reason why the timing relation between the two cylinders resists your efforts, there is nothing for you to do but to call in the services

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of someone who will locate the lost motion, or, difference in adjustment that is at the bottom of the undesirable result.

Exhaust pipes heat up because they are too small, unless it is that you are running on a retarded spark, or, using too much gasoline.

# SOME VALVE SPRING TROUBLES DISCUSSED.

Editor THE AUTOMOBILE:

[1,658,]-I have had occasion to note that in some cars the valve springs seem to last as long as the car, while in other makes it is not uncommon to have to replace the springs at frequent intervals. Is it due to the quality of the steel, overwork, or what?

New York City. R. C. O.

Trouble could issue as a result of overwork, or, the quality of the springs might be at the bottom of some cases of failure. As a rule, it is to another circumstance that the "lazy" action will be traced.

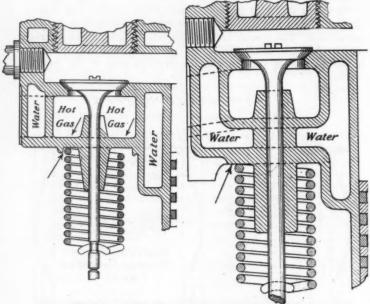


Fig. 1—Showing how spring's temper is drawn the heat. Fig. 2-Showing the protected from excess l by

Fig. 1 shows a case in which this trouble would be eminent in view of the fact that the spring comes into intimate contact with the wall, on the other side of which the products of combustion are not separated by a water jacket.

Fig. 2 shows a better construction, in which the springs do not contact with "gas hot walls," it being the case that the water jacket intervenes. This is an example from one of the finest products with a high reputation for reliability, and the valve springs do not "wilt" if this idea is executed.

# SPEED CHANGING BY TIMING DIFFERENTLY.

Editor THE AUTOMOBILE:

[1,659.]-From your recent articles on valve timing I do not get any clear idea of what possible changes I could adopt to make a car pull stronger on slow speed. I mean by this, of course, not changing the faces of the cams, simply by the meshing of the Would not a few remarks on this side half-time gears. subject be of interest to many readers? I have a car that has more speed than I care for on these roads, and I have been considering the purchase of a set of lower ratio final drive gears, but if it would be possible to set the valves to get more power at low speeds, it might be as well and cheaper. What influence might the change have on fuel consumption? Let "Subscriber" (Letter No. 1, 601) look at his timing. It might

be that one cylinder fires very much behind the others, which would make that cylinder very weak and jerky, but could not be so noticeable at higher speeds and lighter loads.

Thomaston, Me

It will not be inexpedient to try to change the gear ratio (effect) by so altering the timing as to make the motor go slower. Any change, such as this, will cause excess gasoline consumption, difficulty in starting and eccentricities in operation.

# TEMPERATURE OF EBULITION OF LIQUID FUEL.

Editor THE AUTOMOBILE:

[1,660.]-Will you please insert this in "Letters Interesting and Instructive." I would like to know if any one has ever tried to generate gasoline into gas, for use in gasoline engines? If this can be done, would it not be better than the liquid in several ways? Perhaps you will say gasoline cannot be generated into gas without heating, which would be too dangerous and complicated and out of the question for use on an automobile. But I think it can. I have a device, which I have been testing for some time on a gasoline stove and it works fine. No liquid gets to the burner, nothing but the pure gas, very simple and perfectly safe, taking less than half the gasoline used for the ordinary stove for the same fire. Will soon test it on gasoline engines.

Would be pleased to hear from any one who has ever tried gas of any kind for engines and with what success. Will be glad to correspond with any one who is interested in this business Austin, Minn. F. E. KENDALL

It is not uncommon to evolve gas (an explosive mixture) through the intermingling of gasoline with atmospheric air. The gasoline (hexane) when mixed with 15.3 pounds of atmospheric air, will become a homogenious gas at a constant temperature, and the 16.3 pounds of products of combustion will include 3 pounds of carbonic acid, I I-2 pounds of water and 11.8 pounds of nitrogen. In this combination you have the most complete combustion possible of attainment by any method whatsoever, and it takes into account the vaporization of the gasoline. You cannot accomplish more by any process, and the builders of gasoline automobiles are striving for this perfec-

### WOULD TELEPHONE MAGNETO SERVE?

Editor THE AUTOMOBILE:

[1,661.]—Would you please tell me in your "Letters Interesting and Instructive" if an alternating current magneto, such as was used with the old-fashioned telephone bell, could be made to give, through an induction coil, sufficient spark for automobile use? Also, why is an alternating current magneto used with a vibrator Why can't it be used with a step-up transformer, and thus get rid of the vibrator? L. C.

Brookline, Mass.

Very likely, it depends upon the windings on the armature of the magneto and the strength of the magnetic field. The magneto might be a little weak and better results would follow a more pretentious magneto, especially designed for the work. Transformers are used in connection with magnetos, as you

# TO CHANGE DEGREES FAHRENHEIT TO CELSIUS.

Editor THE AUTOMOBILE:

[1,662.]—What is the relation of Fahrenheit to Celsius degrees? New York City.

(Fahrenheit degrees - 32) 5 Celsius =

# INFLUENCE OF INFLATING GASES ON RUBBER.

Editor THE AUTOMOBILE:

[1,663.]—Upon receipt of a communication from Philip A. O'Neil, of 1020 Bedford avenue, New York City, in relation to the effect of tire inflating gases upon the rubber of the tires, and in view of the fact that Mr. O'Neil complained of the rapidity with which the tires deflated, the matter was taken up and investigated at some length. The investigation included the opinions of numerous of the tire makers and the result can be stated in no better lan-

guage than that of one of them:

"Carbon dioxide is absolutely not injurious to rubber, and in that respect is slightly superior to ordinary air, which, in the absence of direct light, oxidizes rubber very, very slowly. For inflating purposes air is entirely satisfactory, since its rate of oxidation is so low as to be practically negligible except in the presence of direct light. Obviously the latter condition is not to be feared from any inflating medium. Carbon dioxide appears to be open to the objection that it diffuses more rapidly through rubber than air, and for that reason tires inflated with carbon dioxide must be inflated more frequently. We would not anticipate any difficulty whatever in satisfactorily carrying either air or carbon dioxide in pressure tanks and we certainly would not expect a formation of any nitric oxide or anything else which would injure either the rubber or the valves." THOS. J. FAY.

Brooklyn, N. Y.

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Model XXX, the Four-Cylinder Stevens-Duryea for 1909.

BEGINNING in 1891, the Stevens-Duryea Company, of Chicopee Falls, Mass., introduced a pioneer automobile and from that day to this they have been building automobiles, advancing as their knowledge permitted, until to-day the Stevens-Duryea product is of world-wide fame. Instead of a hidebound policy the Stevens-Duryea Company made such revisions from time to time as the exigencies of service indicated, and when they found that increasing the number of cylinders promised to them, more than increasing the diameter of a less number of cylinders, they took up the trail and blazoned the way that ultimately resulted in the six-cylinder motor, the flexibility of which is only equaled by the continuity of its overlapping torque. That they pursued a sane course, bounded by a certain conservatism, is evinced from the fact that the Stevens-Duryea product includes a six-cylinder car for the class of work demanding the same and a four-cylinder car in the specialized service for which the four is noted.

In this description, portraying the more recent products of the Stevens-Duryea Company, intending to include the Model XXX, four-cylinder motor, and the Model Y, six-cylinder motor, it will be possible to advance the discussion along common lines to a certain extent, because of the consistent practice of the designers in this case, who seem to hold to the impression that the three-point suspension, for instance, is good in connection

with each of the models, if it is good in any case, as it certainly proved to be.

Utility of the Three-Point Suspension.-In connection with both of the power plants here to be discussed, the motor, clutch, and transmission are all within the confines of a common cylindrical case, the material of which is aluminum alloy, which case is suspended from two arms at the front end, and is supported on a rocker at the rear end. In this fashion the contortions of the chassis, following the interception of road inequalities, are not transmitted and taken up by the individua! members of the power plant, for the simple reason that a unit suspended from three

points only is incapable of participating in the transmission of moments of whatever character, if the moments, so called, are the product of outside potential forces. It is the claim of the makers in this case that the principle here enunciated is such as to preclude a chance of the disalignment of bearings, or the introduction of bending moments into the crankshaft, the clutch-spindle, or driving shaft, or, such other parts as make up the "train" in the trasmission of the motive power. By rendering the whole power plant, including its transmission devices as a single unit, they not only thwart outside influences but the machining process means are afforded by which the alignment of the bearings is assured, and the mechan-

ism in toto is protected as against foreign substances, while oiling becomes a simple matter. In this way the life of cars will be prolonged the greatest possible length of time.

Accessories Common to Both Types of Motors.-Admitting that there will be differences in point of linear dimensions as dictated by the ratings of the two types of motors, it is a fact, nevertheless, that in a broad sense this description will lose no force if it continues along lines common to both. Considering the ignition, for instance, it is to note that two independent systems of ignition are employed, comprising the Bosch high-tension magneto and a multiple coil. The gasoline system in connection with both models consists essentially of a new type of single-jet, float-feed carbureter in combination with a well placed piping system, and an adequate gasoline tank. The control takes into account both spark and throttle with levers and sectors on the steering wheels, so arranged, however, that the control levers do not rotate with the steering wheels. An auxiliary foot accelerator connects with the throttle in each case. Likewise the cooling system is by means of a cellular radiator, centrifugal pump, and belt-driven fan, in which the belt is wide and driven from the flywheel. The intake and exhaust manifolds, the piping and incidentals are equally worked out for the respective models, and the oiling, which is probably one of the most important accessories, is by means of a force-feed oiler located under the hood



Model Y, the Exponent of the Six-Cylinder Stevens-Duryea Idea.

and connected to lubricate the engine in each case. The steering gear, cardan shaft, and differentials are packed in grease, while the transmission gears run in oil, and the transmission bearings receive their supply from the splash.

Features of Clutch and Transmission.—The differences be tween the clutch and transmission in the two models here under discussion are of size and not of material or the principals involved. The clutches used are a "patented" multiple disc type, consisting of two sets of steel discs, one set being faced with asbestos; no oil is used. The transmission gear in each case provides three speeds and reverse, and an automatic position finder for the shifter. The drive is through bevel gears and direct on the high. From the bevel drive, the transmission passes through floating type rear axles, actuating wheels of the artillery type, the hubs of which are drop-forgings of an appropriate grade of steel. The woodwork in the wheels is of a high order, the design of which is such as to lend strength.

Chassis, Springs, Brakes and Detail.—In both models, the chassis frame is of chrome nickel steel, of correct design, and The latterals are suitably spaced, properly channel section. secured, and the fittings are of fine grades of material and securely fastened in such a way as to distribute the stresses. In both cases the chassis frames are suspended on semi-elliptical springs, excepting that for the Model Y there is a third semielliptical cross-member. In the Model XXX the front springs are 36 inches long, and the rear springs are 56 inches long. While in the Model Y the front springs are 36 inches long and the rear semi-elliptical springs are 48 inches long with a crossspring 36 1-2 inches long. The spring shackles and other details of the spring suspension are of a high order of merit. Coming down to the brakes, it is to say there are two sets on the rear hubs, considering both types of cars. The external sets are contracting brakes, asbestos to metal, operated by foot levers. The internal sets are expanding brakes, metal to metal, operated by an emergency lever. In each case the brakes are extra wide of face and liberal for the work to be done.

Model XXX Power Plant.—The motor is with four cylinders, 43-4 by 41-2 inches, bore and stroke, respectively; they are cast in pairs with water jackets integral. Inlet and exhaust valves are located on the same side of the cylinders and are operated by one camshaft. The mounting is such that a clearance of 11 3-4 inches obtains for the flywheel, and the power of the motor is such that the speed of the car ranges between 50 and 55 miles per hour, depending upon the number of passengers in the car, it being the case that the Model XXX is equipped with a threepassenger body, and the lower speed mentioned will obtain if three passengers are seated. With a view to the utilization of the power available in such a way as to engender nice conditions of road performance, the wheelbase is 109 inches, with 56 inches tread, and the tires are 36 by 3 1-2 inches front and 36 by 4 inches rear. The center of gravity was given its due measure of attention, and considering a safe ground clearance as dictated by American roads, the machinery is set as low down as pos-

Model Y Power Plant.-The six-cylinder motor, 4 3-4 by 41-2 inches, bore and stroke, respectively, with water-cooled cylinders cast in pairs, jackets integral, in which the exhaust valves are located on the same side, operated by single camshafts, furnishes the power. If the unit power plant is desirable in general, it is particularly valuable in connection with this power plant, in which as a matter of necessity the overall length is something to take into account. In this plant the clearance under the flywheel is 12 inches, and 16 inches under the crank case. The least clearance is under the rear axle, which is 101-4 inches, while the clearance under the front axle is 12 inches. To consider the power plant without taking into account the relation it bears to the car as a whole would be to ignore not only important, but the essential of relations. In this case the wheelbase is 142 inches, the tread 56 inches, with 36 by 4-inch tires in front and 36 by 5-inch tires for the driving wheels. For a seven-passenger car, considering the power of the motor, and all the other con-

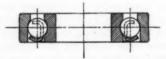
ditions found in this product, the relation of the power to the chassis can be regarded in a very favorable light.

Commercial Considerations in Relation to Both Models.—In the Model XXX car, the equipment consists of lamps and a gas generator. The price is \$2,850. In the Model Y car the equipment consists of full lamps and gas tank, while the price is \$4,000. From the point of view of purchaser of automobiles in considering the price, it will not be out of place to take into account the presence of annular ball bearings throughout, excepting in the engines in each case, the absolutely standard body construction, the perfect carriage finish, rich upholstery, commodious space, and the period of years through which this product has evoluted

Finally, in relation to the respective models, it is to say the Model XXX car has a standard finish comprising English purple, lake body and frame, with primrose yellow for the running gear, but any special color will be provided at an additional cost of \$50. The weight of this car complete is 2,400 pounds. For the Model Y the body is in English purple lake, the chassis in carmine, stripped, but it will be optional with the purchaser to select brewster green for the body and chassis, or any special color at the extra cost of \$50. This car weighs 3,400 pounds.

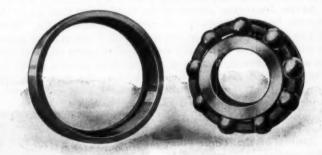
# A NEW MAGNETO BALL BEARING.

Thoroughly tested by a season's practical use, the Hess-Bright Manufacturing Company, of Philadelphia, as well the German DWF at Berlin, and the French DWF at Paris, are now offering for general use a new magneto bearing, which follows in the main the general annular type of which this company was the



Cross-section New Hess-Bright Magneto Bearing.

originator. The inner race is grooved in the usual way, but the outer race is grooved at one side only. The balls are held in a special short steel retainer. A dismembered group of the three elements, inner race, ball retainer with balls, and the outer race, is clearly shown in the illustration, as is a cross section of the



Group Showing Inner and Outer Races, Retainer and Balls.

bearing. At the present time three sizes are being regularly furnished, of the following dimensions:

	E	Bore.	Dia	meter.	Width.		
	MM.	Inches.	MM.	Inches.	MM.	Inches.	
7882	10	.39370	28	1.10236	8	.31496	
7802		.59055	35	1.37795	8	.31496	
7778	17	.66929	44	1.73228	11	.43307	

Other sizes are furnished on special demand, and will be added to the stock sizes as the demand indicates the advisability of carrying them.

City of Mexico, Mex.—The Mexico City Cab and Omnibus Company has in operation on the streets of this city five automobile omnibuses and has placed orders for ten more. The 'buses are built on 35-horsepower Panhard chassis and are 25 feet long; they seat 30 passengers.

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F. A. Babcock in the New Babcock Electric Roadster.

BUFFALO, Nov. 30.—"If you are going to try to imitate the lines of the gasoline car, why not go the whole thing and make a complete job of it while you are about it?" said F. A. Babcock, of the Babcock Electric Carriage Company, when speaking of the new model electric roadster which his company will feature for the coming season. And the result, as shown by the car itself, which is depicted in the accompanying photograph, indicates that the builder has had the courage of his convictions in this respect and has left nothing undone to perfect the deception. This likewise holds true where other essentials are concerned as well, for considering the legitimate field of the electric to be town work, the designer has installed the control on the left-hand side, despite the prevailing fashion, though the adoption of this feature by some of the taxicab builders strongly indicates that the necessities of the case will shortly rule supreme where this essential is concerned.

Starting with the armored wood frame, that has always been a characteristic feature of Babcock construction, it is easy to trace the same trend of design that has become familiar on these vehicles during the past several seasons, and which has doubtless been responsible for their continued success. The "power-plant" consists of 42 cells of the special Babcock battery, equally divided between the space under the hood and that under the rear deck, and a single motor rigidly attached to special supports directly under the footboard, or exactly in the center of the car, thus making for an ideal distribution of the weight. This motor is also a special Babcock design and is built to the specifications of the company by one of the large makers of

electrical apparatus. By means of a Morse si-lent type of chain, it drives to a countershaft, from which the final drive to the rear wheels is taken through the usual standard type of double chain drive. Both front and rear axles are of tubular construction, thus giving lightness with strength, the wheelbase being 92 inches and the tread slightly narrower than the standard, or 52 inches. Flat semi-elliptic springs are used for suspension all round, thus carrying out prevailing gasoline car practice in this respect.

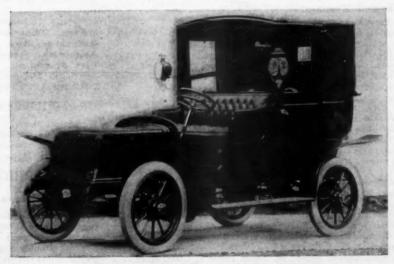
The tire equipment consists of 32 by 3 1-2-inch pneumatics on all four wheels, a special electric type of tire being employed.

One of the chief features of interest about the Babcock roadster, although it is an item of construction that applies to all the Babcock cars, is the special pedal control. The usual controller, giving five forward speeds and two reverse, is located beneath the foot board where it is readily accessible for inspection, and is operated by means of the small side lever ordinarily employed for this purpose. But in addition to this, there is a pedal by means of which the speed of the car may be controlled at will without disturbing the side lever, this making for a close approach to the method of clutch control usual on the gas car, in addition to simulating the appearance of the latter, in the case of the Babcock gentleman's roadster.

This pedal operates a graduated switch acting through a resistance and permits of the use of several steps in the supply of current to the motor, as limited by the position of the side lever. If the latter happens to be set for full speed ahead, the pace of the car may then be controlled from a stop to full speed, merely by using the pedal; if set at the third speed forward, then the pedal switch handles the amount of current that this position of the lever provides from the batteries, acting in the same manner with regard to any one of the lever positions, whether for forward or reverse speeds, a feature that is of great help in handling the car in heavy traffic, as the control may be by the two pedals alone, the foot switch and the brake, leaving the hands entirely free for the wheel.

The Babcock gentleman's roadster is geared for a maxi-

mum speed of 32 miles an hour, and under favorable conditions is good for 100 miles on a single charge of the battery. at an average speed of 17 to 18 miles an hour. Unlike its compeers in the gasoline field, its rumble will face aft, a special footboard being provided for the comfort of the occupant of that seat, whose view will accordingly not be confined to a vista of the rear of the top. Another new model that will be featured by the Babcock company for the coming season is a town car, which will also



The New Babcock Electric Town Car or Taxicab.

be available for taxicab service, and in view of the experience that some companies have been undergoing in the shape of an excessive percentage of equipment constantly in the shop due to mechanical troubles, interest in electrics is again awakening.

The Babcock town car is also equipped with a 42-cell battery of 15-plates each, the weight being distributed in a similar manner, though where its control is concerned a departure has been made by substituting a second wheel just beneath the steering wheel for the side lever control, so that with the special pedal switch already described, the driver is never under the necessity of removing his hands from the steering wheel. The tire equipment in this case consists of 32 by 41-2-inch pneumatics all round. A feature that is employed on all Babcock cars is the safety switch which prevents tampering with the car when left standing at the curb. This consists of a Yale lock operated in the usual manner, but so connected up that unless the switch has been unlocked prior to inserting the starting plug, the use of the latter causes the usual warning bell to start ringing, which continues as long as the plug is left in with the lock in this condition.

The past season has proved an unusually profitable one for the Babcock factory and the Buffalo plant, which probably comes nearer to turning out a complete electric vehicle under its own roof than any other in the country, has been working to its full capacity for some time past with the prospect that this will be the case throughout the coming season. The demand from the Far West has been particularly encouraging and Salesmanager Pearly of the Babcock forces, who is now in Southern California, will devote his entire energies during the next two or three months to looking after the details of the business on the Pacific Coast. In that time, he will have an opportunity to make a thorough canvass of the field where the outlet for electric vehicles is concerned, and before returning East, he will organize the Babcock selling forces in that territory in accordance with the result of his investigations. Following this, agencies in other centers, such as Chicago, where quite a number of Babcock cars have been sold during the past season, will come in for attention, Mr. Pearly believing that 1909 is going to prove a banner year for the electric as well as for other classes of cars.

# SOME RECENT RECORD-BREAKING AT BROOKLANDS

L ONDON, Nov. 10.—Although the Brooklands season has come to an end as far as the public meetings are concerned, attempts at record are still the order of the day. Perhaps the most interesting of all was the performance of the little sixhorsepower Sizaire-Naudin voiturette—the particular car which won the Coupe des Voiturettes last September.

In spite of the wind and rain of Wednesday, November 4, M. Naudin, accompanied by M. Sizaire, decided to make the attempt. From a flying start the first half mile was covered at a rate of 66 1-2 miles an hour, and, keeping up its speed with great regularity, the curious looking blue car passed the 50-mile mark in 45 minutes 54 seconds—an average of 65 1-2 miles an hour. In the hour 65 1-2 miles were covered, and finally the full hundred miles were completed in 1 hour 31 minutes 54 seconds, equal to 65 1-4 miles per hour. The bore of the single cylinder was officially measured up to be 3.93 inches, while the length of stroke is said to be 8.8 inches, or possibly even more.

A new name has been added to the record list by the performance of one of the Grand Prix Brasiers, driven by Bablot. This car just comes within the 60-horsepower classifica-

tion and, as was anticipated, it made short work of the existing figures, which represented a speed average of just over 85 miles an hour. The flying half-mile was covered by the Brasier at 108 1-2 miles per hour, and the ten laps, which, taken from a standing start, constitute the second standard distance, showed an average of 101 3-4 miles for the 27 miles.

A second monster which helped to make this a day of note was the Napier Sampson—memorable from its contest with Nazarro's red Mephistopheles. Driven by Newton, the car raised the 90-horsepower half-mile record to an average of 114 3-4 miles per hour—somewhere near the limit of Brooklands' speed possibilities. The ten laps were soon reeled off at 102 1-4 miles per hour, but while this is a record, it is somewhat disappointing when compared with the Brasier speed.

Motorcyclists have not shown much interest in the track hitherto, but a fortnight ago C. Collier established a new world's record. Riding a seven-horsepower twin-cylinder Matchless machine of his own make, Collier covered 70 1-8 miles in the hour, easily passing the previous record of 63 miles set up by Guippone at Paris as far back as 1905.

# THE AUTOMOBILE CALENDAR

# AMERICAN.

# Shows and Meetings.

- Dec. 31-Jan. 7..—New York City, Grand Central Palace, Ninth Annual Automobile Show, conducted by the American Motor Car Manufacturers' Association, with Exhibits by the Importers' Automobile Salon, Inc., Alfred Reeves, General Manager, 29 West 42d St.

  Jan. 5.......—New York City, Fourth Annual Meeting Society of
- Jan. 5.......—New York City, Fourth Annual Meeting Society of Automobile Engineers. (Will adjourn until January 19 after opening session.)
- Jan. 16-23.....—New York City, Madison Square Garden, Ninth
  Annual National Show of the Association of Licensed Automobile Manufacturers. M. L. Downs,
  Secretary, 7 West 42d St., New York City.
  Jan. 25-30.....—Detroit, Light Guard Armory, Seventh Annual
- Jan. 25-30.....—Detroit, Light Guard Armory, Seventh Annual Automobile Show, Tri-State Automobile Dealers' Association.
- Jan. 27-Feb. 3..—Philadelphia, Second Regiment Armory, Eighth Annual Show, Philadelphia Automobile Trade Association.
- Feb. 6-13.....—Chicago Coilseum and First Regiment Armory, Eighth Annual National Exhibition, National Association of Automobile Manufacturers. S. A. Miles, Manager, 7 East 42d St., New York.
- Feb. 15-20.....—St. Louis, Mo., Annual Show, St. Louis Dealers and Manufacturing Association.

- Feb. 15-20.....-Detroit, Wayne Pavilion, Annual Show, Detroit
  Automobile Dealers' Association.
- Feb. 15-20.....—Cleveland, First Regiment Armory, Annual Show, Cleveland Automobile Dealers' Company.
- Mar. 6-13.....—Boston, Mechanics' Building, Seventh Annual
  Automobile Show, Boston Automobile Dealers'
  Association. Chester I. Campbell, Manager, 5
  Park Square.
- Mar. 27-Apr. 3. —Pittsburg, Duquesne Garden, Automobile Show, Pittsburg Automobile Dealers' Association.

### Races, Hill-Climbs, Etc.

- Dec. 8......-Worcester, Mass., 200-Mile Endurance Run of the Worcester Automobile Club.
- Jan. 1-2......—Philadelphia, Two-day New Year's Run of the Quaker City Motor Club.

# FOREIGN.

### Shows.

- Nov. 28-Dec. 13.—Paris, Eleventh Annual Salon de l'Automobile, Grand Palais, Automobile Club of France (Pleasure Vehicles, etc.).
- Dec. 20-28.....-London, Stanley Show, Agricultural Hall.
- Dec. 22-29.....—Paris, Eleventh Annual Salon de l'Automobile. (Commercial Vehicles, etc.)

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# RAPID INCREASE OF AEROPLANES IN FRANCE

PARIS, Nov. 30.—It is not generally realized, even in France, to what an extent the aeroplane movement has already grown. On a moderate estimate there are under construction in Paris and its immediate neighborhood not less than 350 aeroplanes. The public hears little of them, for in most cases they are experimental machines, that the designer prefers to try out in peace before bringing before the attention of the world. There are fifty orders in hand for the Wright aeroplane, which will be in the hands of well-known sportsmen next season; in addition to this, such shops as those of Voisin, Antoinette, Astra, etc., are busy on machines for French sportsmen. Many men, as, for instance, Louis Bleriot and Melvyn Vaniman, the engineer of the Wellman balloon expedition build quietly in their own shops, and it is not until the machine is brought out for flights that the public wakes up to the fact that something has been doing.

It is not surprising that there is so much activity when there is in Europe alone a sum of about \$250,000 awaiting to be won for aeroplane performances. Experienced men, however, are lacking, for most of those building or buying machines are new to the game, and when they get their apparatus are unable to fly with it. To overcome this, one of the largest firms of aeroplane constructors is about to open a practical aeroplane school, in which they will be more concerned about teaching the practical handling of an aeroplane than the theories regarding its operation. Leon Delagrange, too, has turned teacher, and is prepared to show anyone how to fly on an aeroplane for the sum of \$200. At the Auvours camp Wright is now completing the education of his three pupils, one of whom has already flown alone, and these three men, as soon as competent, will be used to teach the art to others.

# Preparations to Build a Number of Wright Aeroplanes.

It is declared that next year the Chantiers Navales de France will undertake the building of Wright aeroplanes in large series for the French committee. Already an order has been given a French firm for a large series of motors on similar models to the one used by Wilbur Wright. The first order given was for an exact duplicate of the Wright engine. The constructors objected that the motor was defective in several respects and asked to be allowed to make detail modifications. Wright refused to listen to them, and the exact duplicate order was maintained. While working according to instructions, however, the firm built an improved engine, on the same general lines, but remedying the many small mistakes in the one used in America and Europe. On a test being made the improved motor was found to give so much more power that Wright was immediately convinced that he was mistaken, and accepted the changes. It is declared that the engine used for the most successful flights in Fracne barely develops 25 horsepower, which is a remarkable tribute to the efficiency of the aeroplane, for there are scores of machines with four times this power which fail to leave the ground.

### Specially Designed Aeroplane to Cross English Channel.

One of the first machines specially built to cross the Channel from France to England is now nearing completion in the Voisin Frères shops. It is a monoplane ordered by Prince Bolatoff, a young Russian sportsman, who will equip it with a special light weight Panhard engine of 100 horsepower. It is practically certain that an attempt will be made during the early months of 1909 to cover the twenty miles separating France from England, for apart from the various sportsmen who are desirous of accomplishing the task there are half a dozen firms of builders who would give much to have this powerful means of publicity. It is recognized that the sensational flight is not difficult on condition that an engine can be obtained which can be relied upon to run the necessary length of time without a falter. Up to the

present it is the engine that is giving the greatest amount of trouble, few light weight engines being capable of running long without developing weaknesses dangerous to the aviator.

# Practical Men's Opinions on the Types of the Future.

Generally European aeronauts are of the opinion that the flying machine will develop on sporting lines, in the same way as was done by the automobile, but that, owing to the more fascinating nature of aerial navigation, it will have a greater success than the automobile, and less importance from a commercial standpoint.

Wilbur Wright is not of this opinion, and in a recent conversation with The Automobile correspondent declared:

"The flying machine is a military proposition. It will naturally attract a certain amount of attention as a sport, but its greatest future is for use with armies. I believe that owing to the intensely fascinating nature of flying a number of sportsmen will become interested in the flying machine, but their number will not be so great as to have any serious influence on the automobile. I have always been of the opinion that the future of the flying machine was in army work, where it will largely take the place of cavalry, and where it will be an instrument with which the enemy can be constantly harassed. In the immediate future hundreds of these machines will be attached to every regiment. As a commercial proposition there is little future for the aeroplane, for it can never compete with railroads and steamships.

"There is naturally a certain amount of danger with a flying machine, but it need not be any greater than on an automobile, and in my opinion it is more risky to be on the Paris streets than aloft. With my machine there is no danger from a passenger moving; as a matter of fact, I could sit on the tip of the wing and still balance the machine.

"Though of course it is useless to carry unnecessary weight, there is nothing to be gained by the search for extra light motors. Even if the gasoline engine had not come to the fore when we made our early experiments, it would have been possible to fly with a steam engine. To-day there are plenty of automobile engines that we could lift off a car, place on our aeroplane and fly without any change whatever. The aeroplane of the future will be fitted with an automobile engine with a little of the superfluous weight removed."

Asked whether he had succeeded in his experiments up to his expectations, Wilbur Wright declared:

"When we began work we believed that it would be 50 years before man would be able to fly; two years later my brother and I had flown together. It is impossible to say what is the greatest difficulty, for there are a thousand problems in one, and as soon as you settle one difficulty you are on the heels of another."

"During the next five years," declared Henry Farman, "pleasure flights will become exceedingly common, especially around all holiday resorts. There will be no attempt for a long time yet to fly over towns, or over mountain ranges, for journeys with two or three passengers and for distances up to 200 miles the aeroplane is the coming mode of locomotion. Trips across the English Channel are not likely to be undertaken just yet, for although greater distances than this have been covered, there is so much risk that the journey is not worth attempting. By reason of its development as a sport, the aeroplane is bound to have a very serious influence on the automobile. Certainly long-distance touring with costly, high-powered cars will fall off in popularity at a very early date."

M. Levavasseur, designer of the Antoinette light-weight engine and builder of numerous successful aeroplanes, has an entirely different view of the future of the flying machine.

"In five years there will be a new industry, which will be more important than the automobile industry at present. In this period the aeroplane will have reached its maximum of develop-

Stil n A w ti ti U c I

ment, and large passenger carrying machines will be common. The future is entirely with the large aeroplane; we are making a mistake at present by building light and small. Large machines will be much more successful than small ones; an eagle can fly in a gale, while butterflies and all small birds are obliged to seek shelter. Next year we shall have an eight-passenger aeroplane driven by a 200-horsepower engine, capable of traveling over 100 miles an hour. The success of the aeroplane is assured as a sporting proposition, and by reason of its success will cause the abandonment of the automobile."

Comte de la Vaulx, long-distance balloon champion: "It is along sporting lines that the aeroplane will be developed during the next five years. There is very little future for it from a military standpoint and practically none in the commercial field. Already the aeroplane is too fast to be of any use for military

reconnaissance, the speed at which it travels making it impossible for any officer to obtain accurate information on the doings of the enemy. Its inability to go out in all weathers makes it impossible commercially, at any rate for the present."

Ernest Archdeacon, part donator of the Deutsch-Archdeacon \$100,000 prize: "The two most important problems to be solved by the aeroplane are some means of starting without an initial run over the ground, and the provision for passengers. The successful aeroplane of the future will be the one that unites these two qualities, and has in addition the minimum displacement for the maximum bearing capacity. At present constructors persist in copying the bird, thus producing a machine of very great area and only handled with ease in open spaces. It is a mistake to follow nature, and the future aeroplane, in my opinion, will be not one large bird but several small birds joined together."

# BELIEVE RACING AUTO WILL GIVE WAY TO AEROPLANE

PARIS, Nov. 289.—There had been a short, sharp skirmish for the control of aerial navigation in France, with the result that what at one time looked like a war for supremacy has been avoided by a satisfactory settlement. As it became daily more and more apparent that the aeroplane will attract an enormous amount of attention as a sport and industry, the Automobile Club of France decided to interest itself and get such a hold of the sport that it would in time control it as it now controls the automobile. The Aero Club of France, which has struggled with spherical balloons, dirigibles, and now seems likely to be important as the result of the arrival of the aeroplane, frowned upon this intrusion. The League Nationale Aerienne, a patriotic body which dreams of giving France the top notch in all matters of the air, also became jealous.

Finally a gathering of all three parties was arranged, with the result that it was decided to appoint a joint commission from all three bodies with sole power to draw up rules governing aerial competitions and generally govern the sport of flying. Each of the three bodies is left free to do its own work, and while the League and the Aero Club will continue as before, the Automobile Club will branch out in a series of experiments, competitions, and demonstrations for the flying machine.

Though an agreement has been arrived at, it is easy to see that there will be rivalry between the Aero and the Automobile clubs, for the latter realizes that as a sporting proposition the automobile will have to give place to the aeroplane at no distant date. It will be manifestly impossible to get crowds to watch automobiles run over roads at 70 miles an hour when aeroplanes can be seen traveling through the air at 100 miles an hour. Thus the one who secures hold of the aeroplane industry and sport has a permanent and profitable position.

All the various commissions of which the Automobile Club of France is composed, will in future occupy themselves with

aeronautics. Already it is announced that the club committee has made arrangements for the purchase of an aerodome in the neighborhood of Paris, to be used as a training ground for its members, a place where new machines can be tried out, and for competitions. The touring commission has begun to get busy on two maps for aerial navigators, showing air line distances from one town to another in France. Later it is the intention of the committee to have fixed up over every village and town large distinctive signs composed of a group of letters of the alphabet and numbers, corresponding with similar groups marked on the map. The aeroplanist flying across country will read off the sign, turn up a list supplied with his map, and thus locate his position. Another idea is to arrange for electric searchlights at the outskirts of towns to serve towards aviators just the same as lighthouses now aid sailors.

It is declared that the technical committee will undertake serious work in the direction of organizing competitions and making researches in the direction of the most suitable motors for aeroplane work. It is generally admitted by aeronauts that as soon as a thoroughly reliable aeroplane motor is produced the aeroplane will make immense progress.

An indication of the serious manner in which the club is taking up the aeroplane question is shown by the fact that a very large portion of the industrial Salon, to open in Paris, December 24, is devoted to flying machines.

Indications are that there will be aeroplane races near Angers in connection with the Automobile Grand Prix next June or July. The local committee has taken up the matter and is anxious to hold a race from Angers to Saumur and return, distance about 60 miles. The prizes are a challenge cup, to be held for one year by the winning club, and a large sum in cash for the pilot of the successful machine. Much interest will result in this way and profit in the long run.

# WILBUR WRIGHT'S WINNING OF FRENCH HEIGHT PRIZE

PARIS, Nov. 28.—Wilbur Wright's winning of the height prize of the Aero Club of France is likely to cost that body dearer than they expected. Farman made a try for the prize a few days ago, fulfilled all the conditions, but was not awarded the money on account of a technical objection. Farman protested, and has since been awarded the prize; but in the meantime Wright has flown to the necessary height and is without doubt entitled to the prize also. The only solution is to double the prize, giving one to each aviator.

Wilbur Wright won the prize under difficult conditions, the regulations stipulating that he must start off under his own power. The American aeronaut refused to abandon his skates for wheels, but started from his wooden rail without the use

of the falling weights. Before going away for the high fly he touched ground at two points indicated to the committee in advance, then, without stopping his engine, went up aloft. The line of small balloons 82 feet above the ground, was passed with a margin of about thirty feet, and a few seconds later the flyer was at its starting point.

A flight with Captain Girardville followed, and had been under way for about twenty minutes when, at a height of 15 to 20 feet from the ground, the chain driving the right-hand propeller suddenly snapped. Feeling that something had gone wrong, Wilbur Wright put up his hand and cut out the ignition, bringing the aeroplane to earth gently after describing a circle in descending. An hour later flights were resumed.



An Improved Roadway on Long Island that Intersects the Picturesque Northern Coast.

# NEW ENGLAND GOVERNORS ON ROADS AND AUTOS

DOSTON. Nov. 30.—The conference of Governors, other officials, and prominent citizens of the six. New England States on the conservation of the resources of this section of the country and uniform legislation, closed last Tuesday afternoon with a session devoted to highways and automobile laws. At the previous meetings forestry, fruit cultivation, and fisheries were considered, but the highway and automobile questions attracted the largest attendance in Tremont theater. There were three speakers on the general topic of "Highways and Their Use." These were Chairman Harold Parker, of the Massachusetts Highway Commission; Highway Commissioner James H. McDonald of Connecticut, president of the American Roadmakers' Association, and former Governor Nahum J. Bachelder of New Hampshire, master of the National Grange.

Commissioner Parker's sub-topic was "The Construction of Highways" and he told of the growth of the highway system in this country, how it first was started to connect centers, then was neglected for waterways and later for railroads, and how it has now again come to the front. The State of Massachusetts, he said, was one of the first to consider seriously the question of building its roads under the authority of trained men. The Legislature established the Highway Commission which has been in existence for fifteen years. In that time it has built nearly 800 miles of thoroughly well devised stone or gravel roads. It has taken charge of the construction of several hundred miles of town highways which have been built under its direction and supervision, but which still remain town ways. In the course of his talk Mr. Parker said:

It is my belief that the macadam road as now built, with modifications such as different road builders adopt under different conditions, such as the use of only No. 1 stone, with a sand binder,

filling the road completely during the process of roiling, where traffic is heavy, and other small changes, will not be materially changed, whatever damage may be caused by the use of automobiles on the highways. It may be, and undoubtedly will be, that a material will be found, if it has not already been found, which when placed upon the surface or embodied in the top course of a macadam road will offer a surface which will not be destroyed by the corroding action of automobile wheels. It may be proper to say here that this Commission has experimented for several years in the use of tar, pitch, asphalt and oil in surfacing and even building roads, and it is not yet prepared to say what material, if any of those experimented with, will become the material for a permanent road structure. That the automobile has introduced a wholly new condition is undoubtedly true. It is also undoubtedly true that it has caused the revolution of the theory of the macadam road.

Commissioner McDonald of Connecticut urged the importance of trunk line highways in New England. The only way to bring these about, he said, is to take the money out of the State treasuries. He said:

The roads are first for the business of the State and then for pleasure. When the automobile came, with its persistent and annihilating ways, it caused many sleepless nights to the various commissioners and some of them could not help saying, "O, Lord, how long, how long?" But we have realized that the automobile is a permanent institution and we are now trying to meet its demands as best we can. The single "cider-jug and hoe-handle road-building brigade" should go. I would substitute for the words "Democrat" and "Republican" the good roads platform and "a business administration."

Former Governor Bachelder, discussing "Automobiles and Their Regulation," said in part:

It is in regard to the regulations relating to the registration and identification of automobiles, and their equipment with lights, brakes, horns, etc., that there would seem to be the greatest



Making a Wayside Repair on One of the Straightaway Stretches of a Characteristic American Road.



Pennsylvania Scenery That Skirts the Highways.

need for uniformity. The present diversity of laws on these points makes it possible for an automobile owner who is duly registered in his own State, and has compiled with all the requirements of its laws, to be an unconscious lawbreaker in an adjoining State because of a misunderstanding as to the nature of the regulations covering certain minor details. This matter should be taken up promptly by the Legislatures of these States so that an agreement can be reached as to a simple code of regulations, providing for the public safety, but interfering as little as possible with the orderly and reasonable use of the automobile.

Uniformity is also highly desirable in regard to the taxation and licensing of automobiles. As these vehicles are personal property, and presumably taxed by the district in which their owners reside, a tax imposed by the State is double taxation, and therefore opposed to our principles of government. A reasonable license fee can properly be charged, but there would seem to be no justification for imposing taxes on this particular kind of property.

In this connection I may refer to the proposition for Federal registration of automobiles used in interstate travel, which has been advocated at several sessions of Congress. It is not proposed that Congress should interfere with the power of the various States to prescribe regulations governing the safe operation of motor vehicles, but merely to provide for a system under which an automobile registered in the State of its owner's residence and also by the Federal Government, shall have the right to travel over the roads of all other States without the payment of any additional tax. It is urged by the advocates of this legislation that its enactment will not only do away with the present system under which the citizen of one State is subject to vexatious restrictions and taxes by the various States through which he may wish to travel, but will tend to further the adoption of uniform and reasonable legislation.

In conclusion I would sumbit that there is urgent need for a concerted movement by the various automobile clubs and associations to bring their influence to bear on the owners of these vehicles, with a view to securing a faithful compliance with the spirit of the laws regulating their use on the public highways. There is no question but that public sentiment is the most effective factor in checking dangerous driving, and if automobilists will join in a campaign against reckless speeding, they will make it much easier to secure the enactment of fair and liberal legislation on this subject.

Among those who participated in the discussion, following the reading of the stated papers, were Colonel W. D. Sohier of the



On a Southern Road Used Where They Haul Cotton.

Massachusetts Highway Commission, who urged the necessity of curbing the reckless operator and putting a stop to driving by intoxicated persons, and Francis Hurtubis, Jr., of Boston.

# WHO HAS NEW YORK STATE'S NUMBER ONE?

In view of the fact that the registration in New York State is now close to the 65,000 mark and that much of it has been added in the past year or two, inferring that a very large percentage of the total number of cars represented by this unprecedented figure are still in actual use, more than the usual amount of interest attaches to the fate of the first thousand hangers, and particularly to the now historic Number I. Who has "N. Y., No. 1?" Likewise, who has "N. Y., No. 13?" Seen going down Broadway either one of them would attract no small following and the speed of its carrier would probably not permit of its too ready escape from the curious. It would be interesting to learn whether the first 1,000 New York hangers are still doing duty in their legitimate field of activity, or whether the majority of them have not found honored places as wall decorations in the homes of their owners. If any of our subscribers happen to be the proud possessors of cars the registry of which was made sufficiently early to come within this limitation, or know of the existence of such cars that are still in active service with their original tags, we should be pleased to learn the make of the car and something of its record. Doubtless a very large proportion of that first thousand cars were of foreign manufacture, and nothing could tell the story of the success of the American manufacturer more strikingly than the changing character of the registration of New York State as it progressed into the thousands and tens of thousands.

# GOOD ROADS WORK IN THE SOUTH.

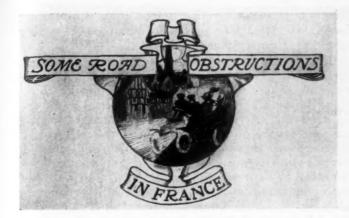
ATHENS, Ga., Nov. 9.—To advance the good roads movement in the South, the State College of Agriculture proposes to hold a good roads school next January in this city. At this time a course of lectures and demonstrations will be given for the purpose of instructing those who attend in the best ways of accomplishing the much-needed road improvement in the South. Besides the men from the college, who will deliver lectures, many experts in road construction from all over the country will be here to aid in the good work. People in every section of the State are much interested in the movement, and from the present indications this first attempt will be a complete success.

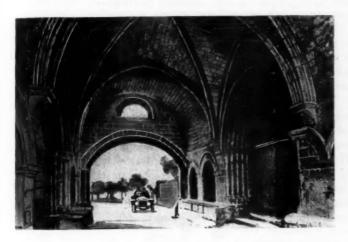
# RUBBER AS A MATERIAL IN PAVEMENT.

Asphalt, alone, as a material for pavement, has its limitations and the wearing qualities of rubber would seem to have value in this connection. This is especially so in view of the fact that a process—used in France—is such that the asphalt and the rubber enter into combination with each other—cold—which combination, on a concrete foundation, is proving to be far more durable than asphalt pavement in the absence of rubber. The asphaltum—reduced to powder—and the rubber, in acceptable form, are suitably combined and applied to the concrete, after a sizing coat, to the desired thickness and rammed.

# HOW TO PASS OVER A WATER BREAK.

Water-breaks are still numerous in many parts of the country. If possible, take them straight, at a slow enough rate of speed that the jar is not too great. If they are taken at an angle, the frame will be racked and twisted, loosening things up more than hundreds of miles' running would do. To prove that the twisting of the frame affects the car, raise any wheel so that the tire is six inches off the floor. Then try and turn the motor over with the starting crank. It will be found almost impossible, the twisting of the frame affecting the engine base also and throwing pressure on bearings far in excess of what they should stand.









Some Things Mr. Miltoun Encountered En Route.

IF laws forbidding street obstructions were enforced with half the fervor with which the local bumbles all over the world put the screws on the automobilist for fancied sins of omission and commission there would be considerably more safety for chauffeurs. Not all of us are reckless drivers, nor are most of us heedless of the welfare of others. Sometimes, ofttimes, in fact, it is we—who pay by far the highest taxes ever known for the use of public (sic) highways—who get more than injustice meted out to us all along the line.

France is the land of automobile touring par excellence, as we all know; the land of good roads and good cooks; and how well the two go together only the touring automobilist in France really knows. The following recitals are selected at random from the notes of the writer made during sundry tens of thousands of kilometres of roving up and down la belle France during the past five years.

In The Charente, in the thickly populated west of France, at Pons, a tiny town not marked on every road map, on the direct road from Bordeaux to Paris, the great Route Nationale runs straight through the vaulted substructure of an old-time monastery. It is a safe enough road under most conditions; at other times it is not so safe, as, for instance, when one meets with a throng of peasant folk returning from market. Within the depths of this cavern, on one happy autumn Saturday, we came unawares upon a flock of sheep attended by two dogs and a small boy, three donkey carts and two calves attached by a cord to the hindermost. There was a horrible mix-up, too horrible for words to describe. Our radiator smelt of burnt wool for a long time after, and there was one sheep less in the world, a dog with a lamed paw and a badly scared crowd of donkeys, both of the human and animal genus. Whose fault?

It is a question as to which is the silliest, least responsible, most provoking thing of life, which obstructs the roads which should be free to wheeled traffic—the other kind as well as that which rolls on pneumatics.

Through a flock of half a hundred silly hens, running hither and thither over one of the most used portions of the great highway across Normandy, between Paris and Trouville, the writer caught only one. Again: Whose fault?

"A Valence le Midi commence," was a phrase we had learned by heart out of Daudet's masterpiece, "Tartarin of Tarascon." Valence is a hundred and fifty kilometres north of Tarascon, on the famous road by the Rhône, known of all automobile travelers between the north and the south of France.

We never changed our gears once during the traject, and with thoughts of a real Provençal déjeuner, with the wine of the Rhône, black olives, the "beurre de Provence" and all the rest at the Hotel des Empereurs, we plunged into the heart of Tartarin's birthplace, with no more than the usual care in entering a conventional French town of its class. Before we knew it we were in the midst of a half a hundred café tables and chairs, the occupants fleeing in a horrible fright in all directions.

Tarascon was en fête, and the proprietor of the Café de France in imbecilic fashion had extended his establishment out over the width of the street, almost to the opposite curb. No one was killed, but everybody got a scare—ourselves as bad a one as the rest. Before the dreamy Provençaux could gather themselves together we were off again. We did not eat déjeuner at Tarascon; the better part of valor was to make wheel tracks south and that as speedily as possible. No one was killed, but a score might have been though, through no fault of ours. Whose fault, then, this time, if you please?

The automobilist's mattress is not always made of roses. Moreover, the automobilist is not a murderer by choice—not even of hens and chickens, who are not road users at all; at least, they pay no taxes for the privileges which they so generously make use of. The rest of us do, and so long as the powers that be give us good roads for our money we are content; it is when the country bailiff puts it in his own pocket that we object.

FRANCIS MILTOUN.

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# AMERICA'S FOREIGN CAR RACE.

Judged from a spectacular point of view, and giving at the same time full credit for the very complete arrangements in its carrying out, the foreign car race at Savannah, known as the Grand Prize of America, was the best event of an automobile racing character ever seen in this country. Furthermore, one well known expert who has been at all the European contests is authority for the statement that he has never seen anything as good on the other side, where there may have been larger fields and greater financial returns, but less thoroughness in management and intensity in the struggle itself.

The event at Savannah was third in a series which began at Dieppe, was renewed at Bologna, and concluded on American soil. France lost to Germany in the first race, succumbed to Italy in the second, and now the Italians have again taken the honors in the third motor battle. Opinions differ as to whether the race at Savannah was either necessary or logical. It would not have taken place if the Automobile Club of France had not supported the Automobile Club of America in the latter's contention with the American Automobile Association. There were several speed races in Europe this year which did not observe the much mentioned Ostend rules. Apparently any substitution thereof for these

rules was wrong in America. Might often is a deciding factor these days. The big club of France may be sorry now that it made Savannah possible.

However, Savannah rose to the occasion in grand style, and, profiting by the stock car racing of last March under A. A. A. auspices, it left absolutely nothing to be desired within its physical and road limitations in supplying a perfect course and as perfect guarding. All that remained for the A. C. A. was to bring on its show, and the talent included fourteen of the best foreign cars and drivers, with six American starters to complete the score demanded by Georgia's enterprising city. The race was costly both to the city and to the club, but Savannah considers that it received profitable advertising in plenty and the club preserved its "foreign prestige." And those present saw a magnificent racing spectacle.

In furthering the selling of cars, the value of the event is problematical, and whatever the amount in advertising, it will figure mostly in the "general results" column. The winning importer may "cash in" his outlay and some more besides. The others may say that racing does not pay.

The futility of American makers engaged in such racing, with hurried and inadequate preparation, was never more glaringly demonstrated. They injure themselves, and the American industry as a whole loses in reputation. If a thing is worth doing at all, it is worth doing well. If we will take the time and devote ourselves conscientiously to the task, we can hold our own and share the honors in racing. But let us hereafter remain beside the road when we have not the time to get fit.

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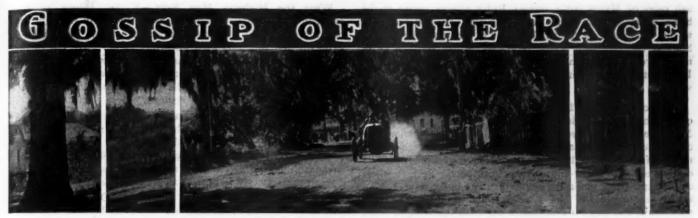
# SPIDER WEAVES HIS WEB TO NO PURPOSE.

When the ordinary grades of steel to be had for automobile construction failed to satisfy the needs of the occasion, the demand was for finer products, which the fabricators of the same promptly offered, not forgetting to charge a most unholy price. No sooner did they get used to the idea of the high price and the smell of quality necessary to accompany it than they were shocked at the lack of appreciation of automobile engineers, who promptly evolved a plan by means of which they were enabled to utilize the cheaper grades of steel, inducing in them at will the qualities required.

The heat treatment of steel is not new, nor did automobile engineers do more than bring it to the high state of perfection that now enables them to impart to the steel they use the several qualities demanded for the respective parts. By suitable manipulation it became possible to render the steel hard or soft, ductile or dynamic, and, in diverse ways, exactly in accord and with the most

The same method

The same method of bringing the structure of the steel up to the especial requirements, in view of the work to be encountered, possesses the virtue of lending itself to the plan, in that the heat treatment is an after process, so that the steel at first can be fashioned into the required shape (in its soft state), and it can then be rendered fit, even though the requirement is for glass hard surfaces over a highly kinetic core. Users of automobiles are benefited materially by the process, since they are afforded initially sound and serviceable parts at a low first cost. Better yet, the cost of replacement is very low indeed. The coming of the automobile was the signal for a display of the potentiality of mind over matter.



Fournier, the Well-Remembered Paris-Berlin Winner, Whose Itala Finished Just Outside the Prize Money.

Among Those Present.-The trade was generously represented at Savannah, and the list included the following: George P. Tangeman and C. H. Tangeman, of the Hol-Tan Company; Alfred Reeves, general manager of the A. M. C. M. A.; Paul LaCroix, Renault Frères branch; Lee Counselman and C. H. Page, Chalmers-Detroit Company; R. H. Johnston, Lewis S. Masuay and Secretary A. R. Warner, White Company; Benjamin Briscoe, F. D. Dorman, F. J. Tyler, Messrs. Monroe & Denzer, the Buffalo agents, Commodore McCloud and Gabriel Cheiro, the Detroit agent, Maxwell-Briscoe Motor Company; Horace De-Lisser, Ajax-Grieb Tire Company; L. D. Rockwell, Standard Welding Company; E. V. Hartford, Hartford Suspension Company; Ned Broadwell, Fisk Tire Company; Guy Vaughan, F. B. Stearns Company; E. S. Partridge and A. W. Church, Wyckoff, Church & Partridge; H. A. Lozier, C. W. Mead, C. A. Emise, John G. Perrin, Lozier Motor Car Company; M. Hauvette-Michelin, nephew of M. Michelin, and J. C. Matlack, of the American Michelin factory, Milltown, N. J.; William Mitchell Lewis and James Gilson, Mitchell Motor Car Company; Alexander Dow, Dow Tire Company; J. Frank Eveland, New York agent of Stevens-Duryea; W. B. Hurlburt and C. R. Teaboldt, Garford Motor Car Company; Egbert Lillie, Itala Import Company; Clare M. Hamilton, Isotta Import Company; J. S. Josephs, Fiat Import Company; Andre De Magnin, Panhard & Levassor Import Company; William DuCros, Dunlop Tire Company.

A. C. A. Steamer Party.—The City of Savannah, of the Savannah Line, which had been chartered by the Automobile

Club of America, had a memorable, happy, and some say hilarious voyage. The ship sailed from New York on Saturday evening and reached the entrance to the harbor early Tuesday morning, but did not dock until that afternoon, having been held up by fog at the mouth of the Savannah river. The following evening the clubmen gave a largely attended reception to Savannahians. The ship was trimmed with lanterns and the deck given over to dancing. A speech of welcome was made by Mayor Tiedeman, to which Winthrop E. Scarritt, a former president of the club, responded with appropriate eloquence. The City of Savannah sailed out of the river at 9 o'clock Saturday morning and docked in New York on Sunday at 2:45 P.M. The ship's hold was filled with touring cars belonging to the members

Maxwell-Briscoe Ladled Out Shrimp Soup.—Among the social functions of race week was a supper given to the newspaper men at the Casino, at Thunderbolt, by Carl W. Kelsey, manager of the Maxwell "mosquito fleet," in behalf of the MaxwellBriscoe Motor Company. Shrimp soup, fried hominy, and other Southern dishes were forthcoming to tickle Northern palates. The souvenirs were miniature steins. Frank T. Battey, president of the Savannah Automobile Club, was by common consent installed as the guest of honor. He jollied and was jollied, you may rest assured, to beat the band. Kelsey modestly promised that the "mosquito fleet" would be running at the finish, and made good, and landed two of the little cars near enough to be timed before the race was closed.

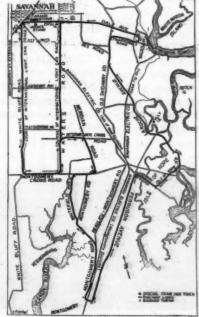
Waldon Still Enjoys Racing.—While it is a fact that the Packard Motor Car Company hasn't been interested in racing for some time, S. D. Waldon, its sales manager, seldom misses a big contest, and, of course, he was present at Savannah. It may have been forgotten by many that once upon a time the Packard Company had a racing craft called the Gray Wolf, designed by Charles Schmidt, a former comrade of Fournier. This craft in the early days of the Ormond-Daytona racing journeyed to the Florida beach, where it accomplished a mile in 46 2-5, which at that time was only 2-5 of a second lower than the world's record held by Augieres with a Mors car over twice the horsepower of the Gray Wolf. Mr. Waldon was in charge of that record breaking expedition.

Winning Lancia Used Continentals.—In the light car race the Lancia was the only car equipped with Continental tires. According to one story that was current before the race; Hilliard sent for J. R. Cothran, the Continental representative at Savannah, and asked him to wire Joseph Gilbert, the American man-

ager, asking that the arrangement for prizes be changed so that only one prize of \$500 be given and that for first position. "I intend to win the race, not run second or third," said Hilliard. The request to New York was granted by Mr. Gilbert, and the result was that Hilliard received \$200 more from the tire company than would have been the case under the original offer.

Special Trains to the Race.—Excursion trains were run from New York on several lines. Noteworthy among them was the "Wall Street Special," promoted by Mills & Moore, who, the passengers say, made good their promise that it should be a veritable "train de luxe." It left Savannah after the race and landed its passengers in New York early Friday evening. Its success was so pronounced that its promoters have announced their intention of running these trains de luxe to all big motoring functions, beginning with the proposed Cuban race in January.

"Van" Had a Narrow Escape.—The night before the light car race N. H. Van Sicklen, who did much to make the Savan-



Map of the Course.

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nah races of March last a success, had a narrow escape at the hands of an amateur owner from Augusta. The latter crossed to the wrong side of the road at an "S" turn and there was a head-on collision with Van's Jackrabbit, which left the latter minus front wheels and with other marks of the encounter. Luckily no one was injured, though both cars were badly wrecked. The accident happened in the dusk of early evening.

Absence of "Herb" Lytle was Noted.—There were many inquiries for "Herb" Lytle, whose driving of the Apperson at the March meeting was well remembered. The information was current to the effect that the popular driver was suffering from typhoid fever, supposed to have been caused by a bad mess of oysters, eaten at a well-known New York hotel. Several others of the same party similarly became ill. The latest from Toledo, O., is that Lytle has had a relapse and is threatened with pneumonia, and that his condition is far from encouraging from the physician's point of view. He has the wishes of a host of friends for a speedy return to health.

Said the Savannah Press: "To each and every one of the thousands of strangers who are, and will be, within out gates to-day and to-morrow Savannah bids a hearty Welcome to Our City! Some of the visitors are distinguished and many more are not; some are rich, but the majority could not with propriety be placed into that category. But the welcome to everybody, without reference to Bradstreet rating, is sincere and hearty. Savannah is mightily pleased to have all of these people visit her, and she will do everything in her power to make their stay agreeable."

The Foreign Delegates.—Chevalier Coltelletti was the only real special delegate from abroad, and he represented the Automobile Club of Italy. George E. McQuesten, a Bostonian, who is a member of the Royal Automobile Club, figured as the British delegate. Charles Raoul Duval, who is connected with the importing of a French car, was the authorized delegate of the Automobile Club of France. Apparently, Pontus Lindstrom, the delegate from Sweden, did not appear on the scene, nor did any one come to represent Germany.

Big Betting with the "Bookies."—Betting on the race was frankly carried on in the De Soto lobby and on the grandstand. Tod Sloan, the jockey, and Kid McCoy, the pugilist; Fellowes & Company, and other bookmakers were on hand and made books well up in the thousands. The Fellowes book was in combination with another big book run at one of the prominent "Rialto" hotels. The Lancia was favorite for the light car race, and Hemery for the Grand Prize, Nazzaro and Wagner ruling as second choices at 4 to 1.

From New Orleans to Savannah.—There was a notable display of touring cars in the parking spaces at the grandstand. Several hundred cars were driven over the roads. The distinction of having driven the furthest and over the most difficult roads to attend the races belonged to R. D. Lambert, who drove in his 30-horsepower White steamer from New Orleans, a distance of 1,150 miles. Mr. Lambert was eight days on the road, and almost all of the journey being through deep sand or heavy clay roads for which the intervening distance is noted.

What the Michelin Man Says.—F. W. Libby, of the Michelin Tire Company, is quoted as follows: "In the light car race four out of the first five used Michelin tires. In the Grand Prize the first four cars used Michelins, as did seven out of the nine that finished. We are pleased, but not exalted. Our tires do their work. People learn that there must be a reason behind a tire that continually carries the greatest cars and drivers to victory in the world's greatest contests."

Henry Ford Still Keen on Racing.—Ever since he built the "999" Henry Ford has retained his interest in racing, though he says that it interferes sadly with the regular routine of a big establishment. "If we get caught up on orders," said he at Savannah, "we may yet build a racing car, despite the fact that it disarranges factory routine to an alarming degree."

Vanderbilt Winner Was An Onlooker.—One of the most interested observers of the race was George Robertson, who won this year's Vanderbilt race, driving the 120-horsepower Locomobile. Robertson was to have been in the light car contest, but, unfortunately, the Gregoire arrived in such condition as to make its starting impossible.

Banquetted at Café Martin.—Joseph S. Josephs, president, and E. Rand Hollander, general manager, of the Fiat Automobile Company, at the Café Martin gave a banquet last night to Wagner, Nazzaro and De Palma, who had the mounts on the Grand Prize Fiats. The other foreign drivers in town were also invited.

Lubricating the Lancia.—Nowadays the interest concerning a winning car seems to include almost everything connected with it. Therefore, the G. A. Hawes Company, makers of Panhard cylinder oil, are priding themselves upon the fact that the Lancia car used Panhard oil.

Chairman of the Vanderbilt Commission Was An Official.— Jefferson deMont Thompson, chairman of the A. A. A. Racing Board and Vanderbilt Cup Commission, was among those present, which also included Robert Graves, another well-known member of the commission.

Lubricating the Grand Prize Cars.—Seven of the nine cars, including the winning Fiat, that finished in the Grand Prize race used Monogram oil. Mr. Stow, a representative of the Columbia Lubricants Company, of New York, is the authority for the statistics.

Clubs Had Latch Keys Out.—The Oglethorpe, the Hussars and other clubs had their latch keys out for all visitors ready and eager at all times to give the Northerners a taste of Southern hospitality in most palatable and quenching form.

Donlin Made a Hit.—W. J. Donlin, secretary of the Chamber of Commerce, who was Savannah's press guardian, was on his job to such good purpose that he sent away every newspaper man an enthusiastic press agent for Savannah.

"Joe" Tracy Saw the Race.—One of the most interested spectators was Joe Tracy, the former Locomobile pilot of the 1906 Vanderbilt race.

How Jervis Puts It.—This is his comment: "At Savannah the trees are moss-grown, but the citizens appear very far from being moss-backs."







# A. A. A. NOW HAS 187 CLUBS AND 20,000 MEMBERS

THE sixth annual meeting of the directors of the American Automobile Association was held at national headquarters, 437 Fifth avenue, New York, Monday. The morning session was of the outgoing directors, the afternoon, a preliminary meeting of the new board recently elected which took office Wednesday. Both sessions were largely attended, that in the afternoon being notable for the presence of nearly forty directors, representing as many clubs. Both sessions were presided over by President W. H. Hotchkiss. The annual reports of the officers were filed and considered and many detail matters disposed of.

The more important matters considered were those suggested by a conference of directors and State officers held at national headquarters November 20 and 21. At this conference there was also a large attendance, representatives being there from no less than twelve State associations and through such State associations, about 100 clubs. The more important matters suggested by this conference, the results of whose deliberations were quite generally approved by the board of directors, were the following:

# No More Sanctioning of Racing on "Horse Tracks."

After two years of agitation within the Association, the following resolutions were emphatically and unanimously adopted:

Whereas, Automobile speed contests on circular tracks built for horse racing has ceased to serve any useful purpose; and Whereas, Such contests do not have the approval of the general

public or any considerable portion thereof; be it
Resolved, That speed contests by automobiles on circular tracks

built for horse racing and of a mile or less in length be condemned by this association; and be it

Resolved, That hereafter this association have nothing whatever to do with such contests.

It was voted to begin as soon as possible the publication of a monthly official journal similar to those issued by corresponding bodies in other nations, and the publication of such journal was placed in the hands of a temporary committee.

The report filed by Secretary Elliott brought out some interesting statistics, particularly with regard to automobile contests and the spread of the national idea represented by the American Automobile Association. During the past year but twenty-four sanctions for track meets were granted by the Racing Board as against fifty-two in 1907; while on the other hand, twenty sanctions were granted for hill climbs as against five the year preceding.

### Growth of the Membership.

In the matter of membership, the national body now has 25 State associations as against sixteen a year ago, and 187 clubs as against 132 then, while the official membership of its present clubs was then about 17,000 and is now upwards of 20,000.

Practically all of the Northern States, with the exception of Maine, New Hampshire, and Iowa are now federated into State associations; similar associations exist in California, Colorado, and Oklahoma, while movements looking to State bodies are already under way in Iowa, Arkansas, Montana, North and South Dakota, Washington, Oregon, Louisiana, and several of the other States. A notable fact is the growth of some of the more important clubs, that of Buffalo having increased from 1150 to 1501 members; the New Jersey Automobile & Motor Club of Newark from 640 to 1450; the Philadelphia Automobile Club from 400 to 800; the Automobile Club of Kansas City from 320 to 520; the Automobile Club of Southern California from 330 to over 500; the Automobile Club of Minneapolis from 400 to 580; and the Springfield (Mass.) A. C. from 150 to 300.

# Included in the Report of President Hotchkiss.

In the course of his very interesting report, President Hotchkiss supplies the following information concerning the work of the

THE NATIONAL IDEA.—The notable feature of the year's work is the growth and strength of the national idea. During the first years of the association's history, the sport governing function was

prominent, and, as most sporting events were in the neighborhood of New York and the association did little to stimulate the interest of clubs outside of that territory, the national idea was not brought out. It was not then fully appreciated that in the United States one club and one neighborhood could not control or dictate. This is now understood and appreciated even in the so-called metropolitan district. In the nature of things, national headquarters should, for a time, be located in New York, but any policy which recognizes conditions in New York as controlling upon the affairs of motordom in all of the States, territories and federal districts of the Union will inevitably fail. In this connection, I quote from the monthly bulletin for November of the Automobile Club of Philadelphia.

"A word now to the motor user: As an individual, you cannot bring about the result you want, nor yet as a local club, nor as a single State federation. You must combine nationally—the man into the local club, that club into a State body, and this, in turn, into a compact national organization. \* \* \* The above tells you the reason for the existence of this club, the Pennsylvania Motor Federation and the American Automobile Association. No single club, local or State, can do this work in the American spirit; it must be a representative body, reflecting the will and action of the local movement everywhere." This is the national idea!

LEGISLATIVE BOARD.—The work of this board has been splendidly done, largely because of the efficient service of its chairman, Mr. Terry. Indeed, when federal registration shall have become an accomplished fact, to him will belong the credit., It is currently reported that the members of the Judiciary Committee at Washington frankly admitted that no bill was ever argued before them with more ability and cleverness than was the federal registration bill by Mr. Terry last March.

GOOD ROADS BOARD.—The work of this board was largely in connection with the convention at Buffalo. That it was well done cannot be questioned. It resulted in the appointment of a national committee, representing all the cooperating bodies, to which was committed the convention of next year. Such convention will thus be largely in our hands, through the good roads board. Work should be begun at once, and the convention held in the summer or fall. I cannot too strongly comment on the very efficient work of Chairman Hooper of this board.

The meeting was protracted and there was an animated discussion of many matters of vital interest to American motordom. This discussion will be continued at later meetings this week.

# Hotchkiss Consents to Serve Again.

At the adjourned meeting of the board of directors, held Wednesday afternoon, the following officers were elected for the ensuing year: President, Wm. H. Hotchkiss, Buffalo, N. Y.; first vice-president, L. R. Speare, Boston, Mass.; second vice-president, Ira M. Cobe, Chicago, Ill.; third vice-president, Frank M. Joyce, Minneapolis, Minn.; treasurer, H. A. Bonnell, East Orange, N. J.; secretary, F. H. Elliott, New York.

President Hotchkiss immediately announced the appointment of the following chairmen of boards: Legislative, Charles T. Terry, New York; Good Roads, C. Gordon Neff, Cincinnati; Contest, Frank B. Hower, Buffalo; Touring Information Board, Powell C. Evans, Philadelphia. The Racing Board was abolished and its functions vested in the Contest Board.

The following executive committee, in addition to the president, first vice-president, secretary, treasurer, and board chairmen, was named: S. A. Miles, New York; H. O. Smith, Indianapolis, Ind.; Wm. E. Metzger, Detroit, Mich.; Oliver A. Quayle, Albany, N. Y.; Paul C. Wolff, Pittsburg, Pa.; W. C. Crosby, East Orange, N. J.; Jas. T. Drought, Milwaukee, Wis.; C. H. Gillette, Hartford, Conn.; Frank G. Webb, Brooklyn, N. Y.; Frank M. Joyce, Minneapolis, Minn.; J. P. Coghlin, Worcester, Mass.; L. E. Myers, Chicago, Ill.; Edwin S. George, Detroit, Mich.; John Bancroft, Wilmington, Del.; L. J. Powers, Jr., Springfield, Mass.; H. M. Rowe, Baltimore, Md.

The first three named were officially designated by the National Association of Automobile Manufacturers at its executive committee meeting held Wednesday to serve on the A. A. hereafter. This action on the part of the national body of manufacturers indicates co-operation between the two bodies that should have notable results.



O. P. Fritchie and His Long Distance Electric.

# RECORD-BREAKING TRIP IN AN ELECTRIC.

In order to demonstrate what his electric car was capable of, Oliver P. Fritchie, president of the Fritchie Automobile and Battery Company, of Denver, Col., started from Lincoln, Neb., November 2, and reached New York City on Saturday last, having been but 28 days on the road. Of this period only 20 days were given up to traveling, the remainder of the time being spent in Chicago, Pittsburg and other towns along the route, so that the car averaged 90 miles a day for the 1,800-mile run, coming over the A. A. tour route from Pittsburg to Philadelphia and New York. On Wednesday last, Mr. Fritchie left New York for Washington, D. C., where he intends to establish an agency; he is also seeking to locate a factory site somewhere in the East. Later in the season he will drive the same car to Chicago for the show there.

The car in which the long trip was so successfully made is an electric victoria of the Fritchie company's make and is geared for a maximum speed of 19 miles an hour, while it is capable of traveling 100 miles on a single charge of the batteries, though its longest day's run was 125 miles, after leaving Toledo. The shortest day's run was in the blue clay mud of Iowa through which only 45 miles could be accomplished. The car was equipped with Goodyear tires and suffered no tire troubles on the run. Though the trip demonstrates the worth of the car, it is not to be inferred that the electric is a touring vehicle, for according to Mr. Fritchie only an electrician could make headway, as at many towns he had to do all the work himself. Mr. Fritchie was accompanied by Mr. Pfaff of his firm.

# PACKARD ESTABLISHES AN AUTO SCHOOL.

DETROIT, Nov. 30.-In order to help local owners of Packards to a better understanding of the construction of their cars and the proper methods of handling and maintenance, the Packard Motor Car Company has established an owners' school which has now been holding weekly sessions each Tuesday night out at the plant. Last week the opportunity was taken of showing the pupils the working of a large automobile building plant at night, as the Packard factory has been running overtime full blast, employing its entire personnel of 3,100 men. The occasion was of considerable more interest under electric light than would have been the case in the daytime. Passing through each department, E. B. Finch, manager of the Technical department of the company, who is acting as instructor, gave his class impromptu lessons in construction and assembly, taking as his models the parts and cars in the various stages of completion as found in the different departments visited. The class has increased at each session and now includes two score of Detroit's most prominent citizens. The course includes a detailed description of the Packard car and its workings, with many digressions into other lines concerning the practical operation of automobiles.

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# DRAWING FOR THE BRESLIN SHOW SPACES.

Local branch managers and agents of cars to be exhibited at the Madison Square Garden and Grand Central Palace shows were entertained at the Hotel Breslin on Tuesday afternoon, incidental to the usual drawing for the privilege of placing a car on exhibition in the Breslin during each of the shows. Representatives of the A. L. A. M. and the A. M. C. M. A. cars both had a drawing. The former was won by E. W. Heddington, for the Haynes, and the latter by Emerson Brooks, for the Pennsylvania. Walter E. Hildreth, the Breslin manager, welcomed the guests. Brief speeches between courses were made by C. F. Clarkson, of the A. L. A. M.; Alfred Reeves, of the A. M. C. M. A.; Victor Breyer, of L'Auto; E. E. Schwarzkopf, president of the Flat Tire Club; R. B. Johnson, of the New York Sun, and A. G. Batchelder. John C. Wetmore acted as toastmaster.

These were the trade representatives present who participated in the drawings: A. B. Cordner and W. H. Flinn, Acme; E. W. Heddington, Haynes; W. K. Carruthers, Mitchell; C. Trewin, Welch; H. U. Kibbe, Renault; Richard Newton, Stoddard-Dayton; A. J. Picard, Stearns; E. W. Nicholson, Midland; C. M. Hamilton, Isotta; Frank Eveland, Stevens-Duryea; H. R. Mallow, De Luxe; Harry Fosdick, Lancia; LeRoy Moody, Allen-Kingston; C. W. Bennett, White; W. J. Lasher, E-M-F; C. F. Redden, Studebaker; H. W. Nuckols, Columbia; Emerson Brooks, Quinby; Herbert Strong, Pennsylvania; C. H. Page, Chalmers; J. A. Clark, Peerless, and D. C. Fenner, Knox.

# GARDEN DECORATIONS PROCEEDING APACE.

Under the direction of W. V. Knowles, architect in charge of the decorations that are to transform Madison Square Garden on the occasion of the Ninth Annual Automobile Show to be held there January 16-23, under the auspices of the Association of Licensed Automobile Manufacturers, the work on the huge triumphal arch is now being carried ahead rapidly. This enormous piece of staff construction is to have a span of 48 feet and will stand 87 feet high. It will be erected at the rear, or Fourth avenue end of the Garden, resting on four Roman-Corinthian capitals and will form the piece de resistance of the decorative scheme. These columns measure 3 feet 6 inches in diameter, and one-fourth of them will be embedded in the arch itself, the remainder standing out in relief. Between the columns will be three bays, their arches being just beneath the cornice, while their bases will be at the balcony rail. In these bays will be massive plate glass mirrors, the center one measuring 20 feet in width, while the side glasses will be but one foot smaller. The arch will be a background for the Garden's decorative scheme.



Massive Triumphal Arch for Madison Square Garden Show.

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# FRENCH SALON IS NOW OPEN.

PARIS, Nov. 28.—The Automobile Salon in the Grand Palais this morning was opened by President Fallières, which substantially indicated the continued great interest in the industry. In an interview, just after the opening of the show, the French expert, L. Auscher, expressed himself in glowing terms.

M. Auscher seems to be favorably impressed with "Knight" motor, the latest novelty in France, and he points out that in this motor the valves (of the conventional sort) are done away with. The valvegear is also out of the way, and there are no more springs, nor bolts, pushing on stems. The noise of seating valves is done away with, and, in fine, the French Knight motor is regarded by him as something to take notice of. It is pointed out that there is yet the commercial try-out to be considered, and while the motor looks good, the practical demonstration may be relied upon to tell the tale. The "shaft drive" is much in evidence, and to the despair of "side-chains." The taxicab has assumed very great importance, and is now regarded as a regular product by all the makers of importance. Commercial automobiles are being exploited at some length, and the future of the commercial, in France, is most promising. Nearly every maker of any note has evolved a light type of car, and the future of the industry, in France, at any rate, will depend largely upon the success of the light automobile.

# IMPORTERS WANT DUTY REDUCED.

WASHINGTON, Nov. 27.—Automobile importers sent Charles H Sherrill, lawyer, to lay some facts and arguments before the Ways and Means Committee to-day in favor of reducing the duty on automobiles from 45 to 30 per cent. The rate recommended was presumably to represent the difference in the wages of workingmen abroad and at home in the automobile factories.

The committee learned from Mr. Sherrill that only the skeletons of the running part of automobiles were imported, all the rest of the machine, including many of the castings, being made in this country. In this respect he thought automobile importers were different from all other importers, being indirectly large employers of American labor.

A machine used as an example was the Italian Fiat that sells here for \$6,000. It costs \$1,600 plus the duty laid down in New York, and the importers spend \$2,600 on it here in getting it ready for the road. Fifteen per cent. of the selling price went to the sales agent and the difference was the gross profit of the importer. Mr. Sherrill started to give accounts of the importers expenses out of that when Mr. Clark interrupted to say:

"You better stop figuring or you will put the importer in a

The profits of the American manufacturer were fixed by a trust, Mr. Sherrill said, and were unreasonable. All but three concerns which made cheap cars belonged to the combine, which dictated the price of all parts and the price at which the machine should be sold at retail. He thought revenues would be greatly increased by decreasing the duty.

Chairman Payne announced that none of the manufacturers of automobiles had applied for a hearing.

## INDIANA ROAD ENTHUSIASTS ORGANIZE.

INDIANAPOLIS, IND., Nov. 30.-At a mass meeting, attended by good roads enthusiasts from all parts of Indiana, a permanent organization of the Indiana Bureau for Good Roads was formed at the Board of Trade Building last Tuesday night. The following officers were elected: R. A. Brown, 614 Indiana Pythian Building, president; George C. Pyle, vice-president; J. C. Crabill, 1609 Bellefontaine street, secretary, and F. I. Willis, 115 West Market street, treasurer.

# ROYAL MOTOR CAR CO. RECEIVER DISMISSED.

CLEVELAND, Dec. 3.-The receiver of the Royal Motor Car Company has been dismissed and a new organization has been effected, which will immediately get under way.

# THE CHAUFFEURS OF WILKES-BARRE, PA.

WILKES-BARRE, Pa., Nov. 30 .- About fifty of the regularly employed automobile drivers of Luzerne County left on one big "joy ride" last week when the Chauffeurs' Club of Wilkes-Barre was started out on a "test." The start was made from room 45 of the Simon Long Building, which has been elaborately furnished by the members, who hope some day to be in the hall of fame with Robertson, Strang, Haupt and the other notables.

When the chairman called the meeting to order, all the "cut outs" were ordered closed, and as a result everything operated quietly. After adopting a constitution and by-laws, George Kessler was elected to preside at the wheel. William Miller, employed by F. M. Kirby, was selected as the first driver behind the pilot, and Ralph Wolfe was chosen as general mechanician, with orders to look after everything for a year. Archie Roberts was given care of the funds and from the amount collected at the outset it is not likely the members will have to journey on "flat tires." To see that the road is kept clear for at least a year, Edward Brown, Joseph Doty, and John Zorzi were selected as a board of governors, while Isaac La France, John Cavanaugh, and Harry Richards were chosen as a membership committee to look after the "entry list." In appreciation for his services in assisting with the organization, Arthur A. Casper, a local car owner, was made honorary president.

# MICHELIN AT WAR WITH A. G. A.

Paris, Nov. 30.-Michelin is at war again with the Association Generale Automobile. This offshoot of the Automobile Club of France sells tires, automobile sundries, etc., to its members at the price they are usually delivered to dealers. Michelin objects to this, declaring that the Association is robbing legitimate traders of business by giving to rich automobile owners a commisson that rightly belongs to the dealer. Further the Association pays no trading tax, and is therefore robbing the State as well as the supply man.

The case is now before the Tribunal de Commerce at Paris, Michelin claiming an injunction stopping the trading of the Association, an indemnity of \$40,000, and insertions in the newspapers. The defense of the Association is that the Tribunal is not competent to judge the case, for it has been recognized by the revenue authorities, after a thorough examination of their books, that they are not a trading body. They declare that they do not sell direct to their members, but transmit all orders received by them to an agent who, for special reasons, is able to give a discount of 5 per cent. on the Michelin product.

There is no doubt that a certain amount of harm is done to agents by the system of giving discounts to members as practised by the Association Generale and other bodies. The point is whether such discounts are legal, and herein lies the importance of the case. Judgment has not yet been pronounced.

# EVENTS SCHEDULED FOR PALACE SHOW WEEK.

In connection with the Grand Palace show, opening New Year's eve, the American Motor Car Manufacturers' Association announces the following schedule of special nights and meetings:

Thursday, December 31-3 P.M.-Private view of automobile show; Meeting, Executive Committee, New York Automobile Trade Association, 8 P.M., "Gala Night"; 10 A.M. Meeting, Show Committee, A. M. C. M. A.

Friday, January 1.-Army and Navy night.

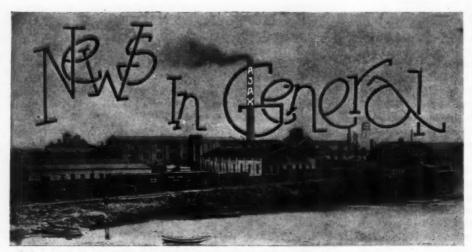
Saturday, January 2.—Students' night; 10:30 P.M., Show smoker to visiting motorists and dealers at A. C. A. Clubhouse.

Monday, January 4-2 P.M.-Executive Committee meeting, Amer-

ican Automobile Association; "Engineers' Night."

Tuesday, January 5—10 A.M.—Executive Committee meeting, National Retail Automobile Dealers' Association; "Society Night"; 4 P.M., meeting Board of Governors, Automobile Club of America; 1 P.M., Show luncheon to exhibitors by A. M. C. M. A., Hotel Manhattan; meeting, Society of Automobile Engineers.

Wednesday, January 6-10 A.M.-Meeting of Committee of Management, A. M. C. M. A.; 8 P.M., meeting Board of Directors, Importers Automobile Salon; Executive Committee meeting, Motor and Accessory Manufacturers; "Merchants' Night."



Factories of the Ajax-Grieb Rubber Company, at Trenton, N. J.

Carriage Dealers Invited to Palace Show.—At the request of a number of prominent carriage dealers who are selling automobiles in connection with their horse-drawn vehicles, the show committee of the American Motor Car Manufacturers' Association has decided to send an invitation to a selected list of 2,200 carriage dealers, each having a capital of \$50,000 or more, requesting their presence at the big exhibition, which will open at Grand Central Palace, New York City, on New Year's Eve. Upon presenting the invitation each dealer will be provided with a badge giving him all the privileges of the show. This preferred list of carriage dealers, numbering 2,200, all enjoying the wide acquaintance of a wealthy buying public, and with their salesrooms and repair shops, should make excellent agents for automobiles and accessories. They are taking up with the auto very fast, and it is believed that the decision of the show committee to give them the recognition they deserve will bring the largest number of dealers that has ever attended a motor car exhibition.

Life of an Automobile.—Sales Manager Charles B. Shanks, of the F. B. Stearns Company, of Cleveland, who is reputed somewhat of a statistician among his newspaper friends, has figured out that the average life of an automobile is just about five years. Possibly the Stearns hustler bases his computations from the public motor car statistics made up by the fatherland of automobiling—France—where they figure from 1903, when there were 12,984 registered motor cars in that country, and when 6,900 cars were manufactured and 350 imported. At the end of 1903, however, there were only 17,107 automobiles, against the 23,234 that there would have been had all of them remained in service. By taking similar comparisons for the following years the estimate of 4.99 years as the average period of usefulness for an automobile was evolved, a period that will probably lengthen as the industry advances.

Peerless to Have New York Branch Building.—The Peerless Motor Car Company is to join the ranks of the prominent automobile concerns doing business on upper Broadway, New York City. Title has been taken to an "L" shaped parcel of property with a frontage of 70 feet on Broadway abutting that of the Baptist Tabernacle of Fifty-sixth street, and 25 feet on Fifty-seventh street. An eight-story fireproof building will be erected thereon, and the building will be ready for occupancy in time to look after the Fall trade of 1909. E. H. Parkhurst, vice-

president of the Peerless Motor Car Co., in speaking of the decision to build a branch on Broadway, said that the move had been made necessary by the great increase of Peerless business in the Metropolitan district.

Private Railway at Franklin Factory.

—It takes three-quarters of a mile of industrial railway to provide for the quick and easy transportation of materials among the many buildings at the plant of the H. H. Franklin Mfg. Co., at Syracuse, N. Y. With a product of the bulk of automobiles, made up of so many parts, intrafactory transportation is a problem, but it has been solved by this railway, which has now been in use long enough to demonstrate its continued utility. Everywhere about the grounds and in and out of the buildings the cars run on narrow tracks. Convenient switches at intersections make trips between buildings possible without wide detours. The cars run so easily that they are pushed without difficulty by a workman.

Moon Tour of the Great Southwest.—Henry C. Merrill, touring salesman for the Moon Motor Car Company of St. Louis, who is making a two months' tour of the Southwest in a Moon car, has arrived at Oklahoma City. Besides many smaller cities on his way, he will pass through Dallas, Fort Worth, Galveston and Houston, Texas, and New Orleans. The tour is significant of the confidence of the makers of the Moon in its capabilities, as the territory in question presents many obstacles to automobile travel, the roads being little more than a name. As Mr. Merrill is calling on present and future agents, they will have it brought home to them by visible means what the car can do under adverse conditions.

Proposed National Organization of Chauffeurs.—During the time of the Chicago automobile show it is proposed to form a national organization of chauffeurs. The subject was broached by the Professional Chauffeurs' Association of Louisville, Ky., shortly before the last Chicago show, and has been simmering since. President James B. Smith, of the Professional Chauffeurs' Club of America, has been in correspondence with the National Association of Automobile Manufacturers, and the result has been a determination to call a convention during the Chicago show, the date selected being February 12. The meeting will be held in one of the rooms of the First Regiment Armory.

Fire Caused No Interruption.—Although the fire at the plant of the Syracuse Aluminum and Bronze Company,

Syracuse, N. Y., November 17, at one time threatened the factory with total destruction, prompt action confined the loss entirely to the office. The foundry was running in the afternoon, and the next day the entire force was at work, and has been ever since. There was practically no interruption to the business except considerable inconvenience in the office, due to loss of records, etc. All the patterns were removed to a place of safety during the fire. It has been reported that the entire plant was burned to the ground, but this was certainly not the case.

was certainly not the case.

Maxwells for the Foreign Markets.—
The purpose of the European trip of J. D.
Maxwell, vice-president of the MaxwellBriscoe Motor Company, is reported to be
that of studying foreign trade conditions
with a view of exporting Maxwell cars
during 1910. After making himself conversant with the requirements of the European market, Mr. Maxwell will proceed to
Mexico and South American countries,
where trade conditions are favorable. In
connection with this report, the fact that
the Maxwell-Briscoe Company contemplates
the erection of a fourth factory near San
Francisco, assumes an important aspect.

Packard at Top of List.—An interesting story is told by the registration of different makes of automobiles which have been driven by tourists stopping at Summer hotels in the mountain regions. There were 1,159 automobiles at the Mount Washington garage, Bretton Woods, N. H., during the past season. Eighty-six different makes were represented. Of all these cars, 231, or 20 per cent.. were Packards. The next greatest number of cars of any one make was 126. The result of the count last year was similar, the Packard being ahead of the next make of car at Bretton Woods during the 1907 season.

Racine Auto Body Plant Enlarged.—Increased volume in its limousine, taxicab, and coupé body business, in addition to its output of the regular open types, has made it necessary for the Racine Manufacturing Company to again enlarge its plant. Two large four-story brick buildings are now ready for occupancy, and foundations are being laid for a third one. The company is purchasing available property adjacent to the factory, with a view of further increasing its manufacturing facilities.

General Bell Buys a White.—The White Company has sold to General J. Franklin Bell, chief of staff of the War Department, a 20-horsepower limousine White steamer. Several White steamers have been owned by the War Department since 1905, and General Bell has had at his disposal the official records covering the cost of up-keep and other features of operation. In view of General Bell's recent purchase, these records were undoubtedly satisfactory.

Splitdorf Display at Paris Salon.—Conspicuous among the many exhibits of accessories at the present Paris salon de l'Automobile is the large and complete display made by C. F. Splitdorf, of 261 Walton avenue, New York City. This is the only exhibit of American ignition apparatus at the French show, and is attracting much attention. J. S. Mack, manager of the Splitdorf Broadway branch, is in charge.

# IN AND ABOUT THE AGENCIES.

Franklin Agency Appointments.—The H. H. Franklin Manufacturing Company, Syracuse, N. Y., announces the following new Franklin agencies: Sherman Dils, Parkersburg, Va.; Jordan Automobile Company, Minneapolis, Minn.; Ohnhaus Automobile Company, Fort Wayne, Ind.;

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Harmon Automobile Company, Portland, Me.; Sid Black Company, Cincinnati; Winnipeg Garage Company, Winnipeg, Man.; Pendleton Automobile Company, Pendleton, Ore.; Northwest Automobile Supply Company, Spokane, Wash.; Swendeman Automobile Company, Helena, Mont.; Troy Automobile Exchange, Troy, N. Y.; G. W. Hanson, Griffin, Ga.; J. B. Moore, Laconia, N. H.; D. M. Jackson, Warren, Pa.; Butte Novelty Works, Butte, Mont.; Brunn Automobile Company, 1140 Main street, Buffalo, N. Y.

Firestone Tires, St. Louis.—F. O.

Firestone Tires, St. Louis.—F. O. Sawyer, 3910 Olive street, St. Louis, one of the veterans in the trade, has disposed of his entire business to the Firestone Tire & Rubber Company, and will in future devote his attention to outside interests. The new Firestone branch will be distributing head-quarters for Missouri, Oklahoma, Arkansas, Indian Territory, Kansas and Texas.

Grout, Philadelphia.—Another branch house has been added to the long list al-ready established in the Quaker City—that of the Grout Automobile Company, of Orange, Mass., who have opened at 1521-23 Spring street, with Wilson H. Stoyle as manager.

Spencer Power Air Pumps, New York City.—The Auto Pump Company, makers of the Spencer pump, has opened an office in the metropolis with the Breeze Carbureter Company, 101 West Sixtysixth street. Philip O'Neill is manager.

Palmer-Singer, Pittsburg.—The newly organized Palmer-Singer and Simplex Sales Agency, of Pittsburg, with temporary offices in the Machinery building, will represent the Palmer-Singer and Simplex cars in Pittsburg and vicinity.

Stearns, Kansas City, Mo.—The Stearns car will be represented in Kansas City by George Tebeau, the owner of the Kansas City Blues, with salesrooms at 1716 Grand avenue.

Cadillac, Des Moines, Ia.—Earl V. Shue has been appointed agent for the Cadillac car, and expects to be installed in his new quarters at 916 Walnut street very

Gyroscope, Detroit.—The C. B. Fear Automobile Company, with salesrooms at 844 Woodward avenue, have taken the De-troit agency for the Bloomstrom Gyroscope

Oakland, New York City.-Sheppard Brothers have been appointed general sales agents for the Oakland Automobile Company.

Locomobile, Kansas City, Mo.—The Dempster Machinery Company has been made agent for the Locomobile in Kansas City.

Oldsmobile, Lexington, Ky.—The Olds Motor Works has appointed L. Hamilton, of Lexington, as agent for the Oldsmobile

Oakland, Boston.—Fred S. Smith, of Columbus avenue, Boston, has taken the agency for the Oakland car.

Oakland, Pittsburg.—The Oakland cars will be represented in Pittsburg by the Bellefield Motor Company.

Marmon, Wilkinsburg, Pa.—The Marmon car will be handled in Wilkinsburg by F. A. Hunter.

# PERSONAL TRADE MENTION.

F. C. Lindoerfer has resigned his position with the Oscar Lear Automobile Company, Springfield, O., and has been appointed sales and advertising manager of the Auto-Car Equipment Company, of Buffalo, N. Y. Mr. Lindoerfer is well

known to the public, having been, during the past eight years, associated with the former Haynes-Apperson Automobile Company, and more recently with the Elmore Manufacturing Company. During the past year he has been prominently identified with the sales and advertising department of the Oscar Lear Company.

of the Oscar Lear Company.

Walter A. Wood, formerly with the Oldsmobile Company, and more recently general manager and treasurer of the Cleveland Motor Car Company, has just gone with the Mora Motor Car Company to become one of Manager Burke's aides at the New York branch. Mr. Wood's extended experience in automobile selling makes him a valuable acquisition to the Mora selling forces. Mora selling forces.

William J. Baughman has resigned as superintendent of the Stanley electric plant at Pittsfield, Mass., and goes with the General Vehicle Company, of Long Island City, N. Y., as selling agent. His territory will be east of Rochester and north of Poughten in New York. keepsie, in New York State, and western New England.

D. W. Gluck, for some years with the Packard Motor Car Co. of New York, as salesman, has accepted a position as sales manager of Fickling & Co., which has recently leased the large seven-story building at 304 and 306 West Forty-ninth street, where several new departments will be

W. B. Fewell, who recently associated himself with the Olds Motor Works, Lansing, Mich., has left the Ohio field to temporarily assist Mr. Stokes, the general sales manager. Mr. Fewell will probably cover the greater portion of the United States while on this special work.

Charles Clifton, treasurer of the George N. Pierce Company, of Buffalo, sailed for Europe last week on the Kron-prinsessin Cecilie. While absent he will look over the new models exhibited at the Paris Salon by the European manufac-

J. Elmer Pratt, who has been identified with the automobile industry in this country since its inception, and prior to that time a leading manufacturer of bicycles, has been appointed sales manager of the George N. Pierce Company, Buffalo, makers of Pierce Arrow cars.

J. F. Singleton, who last spring re-linquished the advertising management of the Firestone Tire & Rubber Company, of Akron, O., has returned to his duties after a prolonged tour of the Firestone branches and agencies, extending from coast to coast.

C. Royce Hough, formerly factory manager of the Pope Manufacturing Co., Indianapolis, and later sales manager of the Motor Car Co., Washington, D. C., has accepted position as general manager of Fickling & Co.

D. B. Price, formerly of the New England branch of the G. & J. Tire Com-pany, has gone with the Firestone Tire & Rubber Company, as traveling representa-tive for the Boston branch, at 145 Columbus avenue.

Harry G. Smith, who recently resigned from the staff of the Diamond Rubber Company, is now with the Pennsylvania Rubber & Supply Company, 2134 East Ninth street, Cleveland.

D. R. Olmsted, of Council Bluffs, Ia., the inventor of the air brake for trolley cars, has applied his invention to a similar device for use on automobiles.

F. L. Sandord, of Worcester, Mass., has joined the selling force of the Boston branch of Franklin people.

# NEW TRADE PUBLICATIONS.

NEW TRADE PUBLICATIONS.

Hoyt Electric Instrument Works, Penacook, N. H.—The new bulletin of the Hoyt voltammeter system of ignition testing is now out, and is about double the size of the old one. The Hoyt voltammeter is intended to be mounted on the dash and left continuously in the battery circuit, giving a constant reading. Both the voltmeter and ammeter windings are so calculated that the instruments do not consume any appreciable amount of current. The moving parts rest on jeweled bearings, and are extremely sensitive to changes in the volume or pressure of the current, but at the same time are very dead beat in action. The scale markings are uniform and easily read. The object of the device, as expressed by the makers, is to give the driver the same knowledge of the condition of the ignition system during the whole time that the battery circuit is closed as the steam engineer has of his steam supply.

White Steamers, as employed by the

that the battery circuit is closed as the steam engineer has of his steam supply.

White Steamers, as employed by the government and a number of cities for ambulance service, patrol wagons and buses, are fully described in a new booklet which has just been published by the White Company of Cleveland. Considerable space is devoted to the ambulances employed by the Army and Navy departments, together with a number of letters from government officials, giving their opinion of the Whites for this service. The various types of White buses, as used by different hotels and for livery service, are liustrated as well as the White steam patrols used in this country and abroad.

Willard Storage Batteries.—The Willard Storage Battery Company, of Cleveland, has issued its catalog announcement for 1909 containing a full description of the storage battery field for automobile use as covered by this company after 18 years' experience in this kind of work. The company thinks that in the newer models it has overcome the usual difficulties met with in storage batteries for automobile work, i. e., corrosion, spilled solution, and sulphating. Explanations with diagrams are given, illustrating the many uses of the storage battery.

Apperson for 1909.—The 1909 catalogue an-

illustrating the many uses of the storage battery.

Apperson for 1909,—The 1909 catalogue announcement from the Apperson Bros., of Kokomo, Ind., is out showing seven different models for the coming year. The new models of smaller horsepower will employ the shaft drive, while those for the 50-55-horsepower motor used in the model K and Jackrabbit, double chain will be furnished unless the purchaser desires the shaft drive, which the makers are prepared to furnish. For the first time this company is putting out a sixcylinder rated at 50-55-horsepower.

Davis Robe Company.—In preparation for the coming cold weather automobile owners, who contemplate using their car, would not make a mistake by spending five or ten minutes in reading the announcement of the Davis Robe Company, 126 State street, Chicago. The small booklet contains full descriptions of the partially enclosed robe and the arctic over-pants made by this company, with illustrations making clear their simplicity and usefulness in all weather.

Ford Motor Cars.—This is the title of an attrective booklet test lessed by the Eard

Ford Motor Cars.—This is the title of an attractive booklet just issued by the Ford Motor Company, Detroit, and it gives the long-looked-for information concerning the mechanical details of the complete line of new Ford models for 1909. Its contents are more in the form of a running story than in the usual catalogue style, making it that much easier reading, so that before one is aware of it he has read the pamphlet from cover to cover.

About the Stearns for 1909.—An attractively embossed cover bearing the white line radiator forms the foreword to the new Stearns catalogue, and it is appropriate in that this is the same introduction that one usually gets to the Stearns on the road, the car being easily distinguishable in this manner as far as it can be seen. The booklet is devoted to the Stearn's achievements on the road, as well as to a description of the new models.

Another Gildden Booklet.—The latest story of the recent A. A. A. tour has just come out in a booklet published by the R. M. Owen & Company, New York City, general sales agents for the Reo, under the title of "Two Weeks." Besides the map showing the principal cities passed through, the story is interspersed with scenes along the route which help materially to give a lucid and interesting idea of this famous fifteen days' contest.

Johnson Friction Ciutches.—The Carlyle

Johnson Friction Ciutches.—The Carlyle Johnson Machine Company, of Hartford, Conn., manufacturers of the Johnson friction clutches, marine reversing gears, etc., are using the experience gained in producing clutches for commercial work in the new model clutches for cut-off couplings for use in connection with marine motors. A

# TO ADVERTISERS

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